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Canadian International Acquires New Mills

New Brunswick International Paper Co. and the International Power and Paper Co., Ltd., Become Property of the Canadian International Paper Co.—This Makes the Company the Largest Producer of News Print in the World, Controlling a Daily Capacity of 2,800 Tons from Four Modern Mills—Own Important Sulphite Mills

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, April 25, 1932.—The Canadian International Paper Company announces that it has acquired the New Brunswick International Paper Company and the International Power and Paper Company of Newfoundland, Limited. The entire capital stock of the New Brunswick Company has been acquired from the International Paper Company; and all the common stock of the Newfoundland Company from the International Paper and Power Company. Combined assets of the three companies total over $180,000,000. The entire transaction is being accomplished through exchanges of securities and will involve no new financing.

Largest News Print Producer in World

With the acquisition of these properties, the Canadian International Paper Company becomes the world's largest producer of news print paper, controlling a daily capacity of over 2,800 tons of news print from four modern mills, all favorably located for minimum transportation costs to their principal markets. The Canadian International's two mills are located at Gatineau and Three Rivers, Quebec, and the two mills of its subsidiaries are located at Dalhousie, New Brunswick, and Corner Brook, Newfoundland. These properties are considered to be the most efficient producers in the news print industry, with an average cost of production generally believed to be lower than that of any other group of mills under unified control in North America.

Due to their position as members of the International Paper group, these mills have been able to maintain a relatively high rate of production during the recent period of declining consumption, because of the International Paper Company's policy of curtailing news print operations at its mills in the United States where operating costs are somewhat greater.

Relatively Favorable Showing

Financial statements for 1931 are not yet available but it is understood that the earnings of the Canadian International Paper Company and of the newly acquired subsidiaries covered interest charges on all their outstanding bonds by substantial margins. The relatively favorable showing of these properties is, in a large part, the result of progressive increases in operating efficiency attained by the management at all four mills. Average production per operating day in each mill has been substantially increased from year to year and this, combined with operating economies and efficiency, has produced corresponding reductions in operating costs.

At the Corner Brook mill in Newfoundland the best average daily production in any month prior to 1928, when control of the property was acquired by the International group, was 403 tons. This production has been increased successively from year to year until in 1931 the average daily output of the mill was 567 tons, and rates as high as 593 tons per day have been achieved over periods of several weeks' duration, indicating that the yearly output of the present machines can be further increased.

Thoroughly Modern Mills

All four mills are of thoroughly modern design and construction, having been put into operation within the last ten years. The eight machines at Three Rivers were put into operation between 1922 and 1926, the Corner Brook mill in 1925 and the Gatineau mill in 1927. The Dalhousie mill, in particular, reflects the most modern development in news print mill construction. Two of its machines began operation early in 1930 and the other two in November, 1930, and January, 1931. These two latter machines were especially designed and constructed for operation at considerably higher speed than has been attained in the industry up to the present time, and correspondingly excellent results are being obtained from them; the daily production of the mill for 1931 averaging 534 tons while operating and more recently averages in excess of 600 tons per day have already been attained for extended periods.

Own Hydro-Electric Plant

The Newfoundland Company owns and operates its own hydro-electric plant located at Deer Lake, thirty-one miles from the mill. The hydro-electric plant has a present installed generating capacity of 156,000 horsepower and is now supplying the mill with sufficient current not only for motive power but also for the generation, through the use of electric boilers, of practically all the steam requirements

(Continued on page 22)

Philadelphia Paper Market Shows Steady Trend

Although Volume of Trading Is Mostly Confined to Seasonally Active Standard Grades Prices Are Generally Well Maintained—Consumption of Fine Papers Growing — Kraft Wrapping Paper Conditions Spotty—Bag Quotations Again Advance

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., April 25, 1932.—While firmer tendencies are evident in the steady prices of paper generally, the volume of trading is confined to restricted lines of seasonal activity. Fine papers show growing consumption after having been, for several weeks, draggy. Card boards, announcements and better grades of bond and writing are in the active list. Krafts hold steady, but orders are of the spotty type. Tissues are among the seasonally active products and at the lower prices of the past month, when a fractional reduction was made. Saturating felts are advanced in price, which dealers believe a movement in favor of growing business among building papers dealers as the outdoor season begins.

Another advance in the price of bags was announced last week. The prices of all grades were quoted 10 per cent higher as the trade found orders growing in volume. This makes a 40 per cent advance in prices for the current year, the other rise of 30 per cent having been made in January. The bag situation is the most gratifying of trade factors and with the united efforts of the jobbers, distributors and manufacturers have been able to stabilize the market on a firmer basis than existed in the past half decade.

Though the paper stock market is not keeping pace with usual seasonable activity, prices are firmer, and several grades have advanced, owing to the difficulties of obtaining supplies. The cheaper grades, too, have been fractionally higher the past week. Mills, however, are not buying in any volume of consequence.

Mill Superintendents Meet

Mill superintendents enrolled in the Pennsylvania, New Jersey and Delaware Division of the American Pulp and Paper Mill Superintendents Association met at the Abraham Lincoln Hotel, in Reading, Pa., April 16. There were 55 mill executives present at the Spring session of the local mill group. An entire day's program of practical educational topics and subjects on mill operations, interspersed with luncheon and banquet in the evening, followed by dancing, occupied the convention.

Charles Kephart, chairman of the Pennsylvania, New Jersey and Delaware Division, and of the York Haven Paper Company, York Haven, Pa., presided, and introduced Mayor Herbert Ermintrout, of Reading, who gave the address of welcome at the opening hour of the program. C. H. R. Johnson, of the Downingtown Manufacturing Company, Downingtown, Pa., was the first speaker on the list and made his theme "Extractor Rolls for the Cylinder Machines," going into details of the manufacture, quality and modern methods of operation of such rolls made by the Downingtown company. He reviewed the early types of rolls and then brought the executives up to date in a resumé of perfection of the present improved types.

In the absence of R. N. Watts, of the Cheney Bigelow Wire Company, his talk on "Dandy Rolls and Wire" was given by E. Edwards, of that company. John Lundrigan, industrial superintendent of the International Paper Company, gave an account of "Safety-First as Applied in Paper Mills," taking his audience through modern means and into details of equipment used for safeguarding workers and practices of the International Paper Company in safety as they are carried out by his corporation.

Before the closing of the business sessions and the "Question Box" there was an elucidating talk by W. E. Brown, sales manager of the American Wringer Company, on "Rubber Rolls." James Garfield Ramsey, one of the best informed mill superintendents in the paper manufacturing industry of the country, presided at the "Question Box." Mr. Ramsey, who is past president of the association and superintendent of the Jessup & Moore Company mill, expounded the intricacies of mill problems, with the aid of his associates in an open forum.

At the evening banquet Mr. Ramsey was Master of Ceremonies and introduced the main speaker, Charles E. Roth, past president of the Reading International Business Men's Club. Those who arranged the program as members of the committee were Charles Ellis, Downingtown Manufacturing Company, chairman; Harry Busser, York Haven Paper Company, and F. Carol Wendt, P. H. Glatfelter Company. There will be appointed a committee to arrange for the annual Fall Convention.

McDowell Paper Mill Improvements

Continuing the program for modernizing the century old mill of the McDowell Paper Company, in the Manayunk district, Charles McDowell has just completed the installation of modern units to the water supply equipment and the power plant, whereby the mills are supplied with new filtration basin and back water recovery system. These augment the lately added power equipment completed last year when modern boilers were erected. All parts of the mills and plants with their machinery and units are now up-to-date and the firm is going ahead on its increased production of glassines, grease proof and food wrapping paper specialties. The McDowell Mills were built in 1825 and have been consecutively in the hands of owners of a direct family line from the founder of the business, with Charles McDowell now head of the firm. They were the first paper mills to use Fourdriniers, made by Gavatt.

Pilgrimage to First Paper Mill

Commemorating the 200th Anniversary of the birth of the noted scientist, scholar and owner of the first paper mill in America, David Rittenhouse, a public meeting was held at the Germantown Academy when noted officials of the State of Pennsylvania, professors of the University of Pennsylvania, and members of the Germantown Historial Society, were told of the early history of paper making in this country and then journeyed to the cradle of paper manufacturing, the old Rittenhouse Mill, along the Wissahickon in Fairmount Park, last Tuesday. Among those who made the pilgrimage were Charles McDowell, of the McDowell Paper Mills, and Grellet Collins of the Dill & Collins Company, both representing the business families of the oldest existing paper mills in Philadelphia and heirs to the firms founded in the early years of the country.

A review of the history of paper making in America was outlined by the president of the Germantown Historical Society, Robeson Lea Perot. The talk centered on the leading paper mills existing in Colonial times and in the

early years of the industry. The mills included were the William Rittenhouse Mill, the first paper making mill in the country, founded in 1690, and now lineally the Dill & Collins Paper Company; the old Thomas Wilcox Mill, built in 1729, and known as the Ivy Mills at Glen Mills, just outside Philadelphia, which manufactured the paper used by the Government for the making of Continental money and documents and press boards; the McDowell Mills, built in 1825, devoted to manufacture of bonds and ledgers at that time; the Charles Megargee Paper Mills, established in 1830, makers of book papers; and the Samuel Eckstein Mills, producers of writing papers and book papers. The Rittenhouse Mills made printing papers.

Paper Trade Bowling League Finals

The finals in the 1932 games for the championship play next month will be staged on April 29 by the Philadelphia Paper Trade Bowling League at the Casino Alleys, 920 Chestnut street. The finals are the last half series of the games played this Spring and Winter, and are prior to the championship play to be held May 6, when the cup and prize awards will be made at the closing of the season's games in the Casino Alleys. The D. L. Ward Company won the first half series of games, while the Whiting Paper Company is ahead, so far, in the last half. The teams to be lined up in the finals are D. L. Ward Company, two teams; Whiting Patterson Company, two teams; J. R. Howarth Paper Company; Garrett Buchanan Company; Whiting Paper Company, and Wolf Bros., each with one team. The Roll Off between the winners of the first half and the second half for the championship play will determine the 1932 winner.

Charles Matthias Back From Extensive Tour

Charles Matthias, of the Matthias Paper Corporation, 143 North 5th street, returned from an extended tour of the country, and attendance at the Packaging Convention held last month in Chicago, and the Convention of the Southern Division of the National Paper Box Manufacturers Association, held at Chattanooga, Tenn., where the Matthias Paper Corporation was an exhibitor of its Sunrise Line of box makers papers.

Wants Printed Envelopes Continued

DAYTON, Ohio, April 25, 1932—Congressman Byron B. Harlan, representing the industrial district, known as the historic Third Ohio, comprising the counties in which Hamilton, Middletown and Dayton are located, this week criticised President Hoover's recommendation as reported, that the Government discontinue the sale of printed return addresses on stamped envelopes. The contract for this work is now held by the International Envelope Corporation of this city.

President Hoover is reported to have included this recommendation under his proposed economy program.

Congressman Harlan, who came here this week, from Washington said that "if this proposal is enacted, it will not only throw hundreds of men out of work in the Third district, but will immensely increase the cost of the Postoffice department and will work a hardship on small business concerns throughout the country."

Harlan estimated that enactment of the law, as proposed, would increase Governmental expenses more than two million dollars annually. This increase, he said, would have to be made in the budget for the Dead Letter Office and the Bureau of Printing and Engraving.

The Dayton Congressman said that the President in making his proposal, has ignored the recommendations of the Postmaster General.

Smith Paper Co. Changes

LEE, Mass., April 22, 1932—Jacques Crolard has been appointed vice-president and plant manager of the Smith Paper Company, to succeed Gilbert L. Clark, resigned, it is announced by the British-American Tobacco Company, owner of the mills.

Arthur D. Kingsley, who came from Lexington, Ky., where the home office of the company in this country is established, has assumed the office of president; to succeed Norval H. Busey, who has been connected with the company at Lee for fourteen years. Mr. Busey came to Lee as vice-president and seven years ago was elected president to succeed Willard Smith.

Other changes include the appointment of George S. Gordon, Jr., as superintendent of the Niagara mill. This mill, which started operations a few months ago after having been shut down for several years, now employs more than one hundred girls.

Timothy E. Healey, who has been employed by the Smith Paper Company since he was a boy, has been transferred from the Niagara mill to the position of superintendent at the Columbia mill, to succeed Benjamin A. Teale, Edward Gibbons, who for 24 years has been superintendent at the Centennial mill, has been assigned to be in charge of the trucking for all five mills.

Peter Tyer has been given Mr. Gibbons' former position and has been transferred from the Niagara mill. The Hayden brothers have been placed in charge of construction. Frank Hayden will have charge of the machine shop and Robert Hayden will handle all outside work at the mills.

Mr. Crolard, the new vice president, has been with the British-American Tobacco Company for many years and he has been in Lee for the past year. He has extensive papermaking interests in France in the Ousedat Paper Mills at Savoy, where fine grade papers are manufactured. He will be directly over the actual manufacture of the paper turned out in the local mills of the company. Cigarette papers used for the manufactured product and also booklets to hold the papers are manufactured by the company.

W. B. Bullock Made Lieutenant-Colonel

Warren B. Bullock, manager of the Import Committee of the American Paper Industry, was notified on April 22 of his promotion to the rank of Lieutenant-Colonel in the Quartermaster Reserve. Colonel Bullock served in the World War as a commissioned officer and on his return to civil life accepted a commission in the Reserve Corps. He was one of the founders of the "Winter Plattsburg" conferences, which have since been developed into the regular program of instruction followed by reserve officers who wish to keep abreast of current thought in the military profession. Colonel Bullock has also served as the representative of the War Department at his home, Yonkers, N. Y., in charge of recruiting for the Citizens' Military Training Camps, and as vice-chairman of the Westchester County recruiting organization. Although assigned to the 502nd Post Headquarters, Colonel Bullock has recently been transferred to staff duty in connection with studies of the organization of units to handle troops at embarkation or debarkation ports in case of another national emergency. Prior to his present assignment he was in the Motor Transport service, as a result of his having been Senior Instructor at the Motor Transport School which was organized at Jacksonville, Fla., during the war.

Canadian News Print Exports to Japan Expands

Dominion Attains Second Place Among Suppliers of News Print Paper to Land of Rising Sun —Exports In 1932 Amounted to 11,767 Short Tons, Valued At 1,154,164 Yen— Supplies From United States Have Fluctuated Considerably

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., April 25, 1932.—Canada in 1931 attained the position of the second most important supplier of news print to Japan, although in 1929 no Canadian news print was shipped to that country and very little in 1930. This is the news that comes from Richard Grew, the Canadian Trade Commissioner at Tokyo.

The exports of Canada to Japan in 1931 amounted to 178,285 kin, or 11,767 short tons, with a value of 1,154,164 yen, which is about 28 per cent of the total importation of Japan. The importation of such large quantities of news print from Canada is the result of a combination of circumstances. These Mr. Grew reports as follows:

"Previous to the general world depression, Canadian mills on the Pacific Coast had been experiencing very little difficulty in selling the whole of their production without it being necessary to enter this market. In addition to the general depression with its diminished demand and falling prices, the preference accorded to Canadian news print entering Australia was withdrawn, with the result that exports to that country decreased to a great extent.

"Another factor which had a bearing on the situation was that Japanese news print mills were maintaining prices at a level which made it possible for Canadian news print to compete in this market despite the ocean freight rates and the tariff handicaps.

"Imports of printing paper have increased considerably during the past three years both as regards quantity and value. Supplies from Great Britain have shown a steady falling off, the quantity decreasing by almost 120,000 tons between 1929 and 1931, while the value is less than half as compared to 1929. Both Sweden and Norway are credited with annual increases, both in quantity and value. Exports from the United States, the other principal supplier with the exception of Canada, have fluctuated considerably over the three-year period."

Report Shows Operating Loss

The report of the Bathurst Power and Paper Company for the year ended December 31 last, showed an operating loss of $86,400 on the year, and after a write-off of $115,104, idle expenses, bad debts, etc., the net loss on the year is $201,565. No depreciation charge was made or dividends disbursed and previous balance of $160,704 carried forward after adjustments left a debit balance of $40,860.

The following comments were authorized by the directors:

"The company has booked contracts for the current year which are sufficient to allow for a 50 per cent operation of one machine. Sales of sulphite pulp were below the previous year and the price realized was unproductive of profit.

"During the year arrangements were completed for the manufacture of kraft liner board, one news print machine being equipped for that purpose at a cost of approximately $165,000, and went into complete operation at the end of the year. The product has been favorably received in the trade and prospects for 1932 indicate that the company may expect to receive its fair share of the business.

"The balance sheet reflects an excellent financial position with net current assets exceeding $2,100,000 and with a ratio of current assets to liabilities in excess of 22 to 1. Cash and marketable securities (at quoted values) together are in excess of $654,000. Your company has no funded indebtedness or bank loans."

New Director for Howard Smith Mills

The Hon. Charles E. Dunning, former Minister of Finance for the Dominion, was elected a director of the Howard Smith Paper Mills at the annual meeting of that company. He replaces the late J. A. Cameron. The other business was of a routine character.

Price Bros. Deny Merger Report

The *Toronto Globe*, in a despatch from Quebec, stated that control of Price Bros. & Co., Ltd., one of the oldest pulp and paper companies in Quebec, was reported to have passed into the hands of Lord Rothermere and British associates.

The despatch also said there were rumors management of Price Bros. properties would be taken over by Anglo-Canadian Pulp and Paper Mills, Ltd., representing the Rothermere interests.

The story said there were further rumors that Ernest Rossiter, president of the St. Lawrence Corporation and numerous other companies with his associates, had completed arrangements to absorb the Canada Power and Paper Corporation.

Officials of Price Bros., interviewed in regard to the story, stated that no one in the company had heard of such a development.

Latex Fibre Industries Incorporates

[FROM OUR REGULAR CORRESPONDENT]

BEAVER FALLS, N. Y., April 25, 1932.—Incorporation articles were filed this week by the Latex Fibre Industries, Inc., showing Harry S. Lewis, prominent paper mill man of this village, as a director. The capital stock consists of 5,000 shares of preferred stock with a par value of $100 each and 1,000 shares of common having no par value. Other directors are Reed P. Rose, of New York City, and Harlow W. Waite, of Providence, R. I. Among the stockholders listed in the incorporation paper are Morris E. Dry, Hugh L. Fates and Dorothy Carman, all of New York City.

The company will carry on operations in the old paper mill of Lewis, Slocum & LeFevre in this village to which extensive alterations have already been made. The new concern was formed for the purpose of manufacturing paper, paper board, wood pulp and similar products.

Coty Machine Co. Busy

WATERTOWN, N. Y., April 25, 1932.—Announcement was made this week that the Coty Machine Company is among the busiest concerns hereabouts and three multiwall bag machines have just been turned out for shipment to the Bagpak Company, Inc., of Philadelphia, Pa., a subsidiary of the International Paper Company. The machines are said to be capable of making both valve and open topped pasted bags of from one to five walls. This is accomplished at high speed and the product can be made in various sizes. They are also equipped to produce the Coty cut-out bottom bag for which patent is pending.

Chicago Paper Market Continues Listless

Demand for Various Standard Grades of Paper Light, With Small Orders Predominating — Book and Cover Papers Comparatively Quiet — Kraft Wrapping Paper and Bags Only Moderately Active—News Print Paper Conditions Unsatisfactory

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., April 25, 1932.—The long expected Spring upturn in the paper business in the Chicago area seems to be only a hope that is fast dying away. Conditions in the general market were quiet during the past week except for much uncertainty in the cheap sulphite division, which at least enlivened the situation. There is real uncertainty here over this condition. Small orders, which are characterizing the weekly reports, are increasing the costs of doing business in nearly all lines, which cuts away from profits even though the majority of prices are firm. Reports from the news print market indicate interest in the automotive advertising campaigns which, if successful in creating demand for cars, may be the turning point in advertising circles. If the campaign is only very moderately successful, say news print representatives, the car manufacturers are likely to retrench even further in their advertising policies. The news print market, itself, is reported as being poorer than last week and the week before.

Book and Cover Markets Uncertain

The book and cover markets in the middle western district have been uncertain, with demand confined to scattered requests and small orders. The board market bettered itself somewhat during the week. Krafts and bags are holding firm as far as the converters themselves are concerned, but the merchandisers are having a hard time overcoming a market that is slow and inactive. Each week, as evidenced by verbal reports, competition in the kraft market is getting more intensive. Ground woods are dull, while the waste paper market is reflecting the condition of the general paper market.

Paper Salesmen's Activities

Courtney Reeves, Allied Paper Company, recently appointed chairman of the monthly golf activities of the Middle West Division of the Salesmen's Association of the Paper Industry, has definitely announced the lid-prying event for May 20. The course itself has not yet been chosen but, this year in particular, there will be many to choose from. The Middle West Division is continuing its practice of "no speakers" at the regular Monday meetings, the salesmen finding plenty to talk about with the round table discussions. There is a rumor to the effect that, if a regular speaker were now secured to take up the entire time of the meeting, some of the boys would just naturally explode through inability to chip in their views in fast and furious fashion.

Blunden-Lyon Installed in New Quarters

The Blunden-Lyon Paper Company, formerly of 323 West Polk street, has moved its general offices and stock rooms to larger and more serviceable quarters at 560 West Lake street, Chicago. The new space has made possible the arranging of facilities for printers on the first floor, including excellent display space. More than 20,000 square feet will be utilized to the fullest extent. The move comes virtually on the twentieth anniversary of the Blunden-Lyon organization, giving them larger quarters made necessary because of expanding business and permitting them to give excellent service, particularly to the printers located on Chicago's west side. The new telephone number is Dearborn 9750.

Paperboard Association to Meet

H. S. Adler, secretary of the Paperboard Industries Association, 608 South Dearborn Street, Chicago, reports that the next meeting of that organization will be held at French Lick Springs, Indiana, on May 17, 18 and 19. All meetings will be held at the French Lick Springs Hotel and Mr. Adler reports that some golf will probably be included in the entertainment side of the picture. The close proximity of French Lick Springs to Chicago is expected to make the meeting place virtually as popular with Chicago and middle west members of the association as Chicago itself.

To Discuss Market Conditions

Members of the Chicago Paper Association are expecting to hear some valuable educational sidelights on ways and means of meeting present day competition at the next regular meeting of that organization scheduled for the Bismarck Hotel, on Tuesday evening, April 26. The topic for discussion will be the present condition of the Chicago paper market as applied to krafts, bags, etc. At the same time the association will be making further plans for an annual golf tournament and outing which will probably be held in May at the Olympia Fields Country Club.

News of the Trade

Lee Donovan, broker, representing the Lyons Falls, New York, firm of Moyer & Platt, has been confined to the hospital for the past four weeks favoring a badly wrenched shoulder. Mr. Donovan is up now and may be found in his offices for at least a part of the day. He plans, however, a sojourn to Florida in the near future as the final means of remedying his disability.

Mr. and Mrs. J. H. Coy, returned April 25 from a two weeks motor trip through Mr. Coy's middle western territory. During the trip Jim took the opportunity of calling on the trade in the interests of Flambeau. This spring sojourn is an annual event with Mr. Coy. In his absence Paul Joslin, genial assistant manager of the Flambeau Paper Company, has been the boss in the Conway Building office.

Westvaco Inspirations for Printers, No. 74, recently issued from the Chicago offices of the West Virginia Pulp and Paper Company at 35 East Wacker Drive, features a general discussion, properly illustrated, of "How to Generate Immense Influences" through the medium of good illustrations and engravings. The relation of magic and romance as a factor in recent advertising copy and illustration is discussed, as is the timely subject of "Getting the Most From the Second Color." The biological series is continued with an interesting treatise on the works of Gustave Dore and several of his own illustrations. "Setting the Stage" and "Movie Stills Crash Advertising Pages" are two other fine features of interest to the Chicago trade.

Paper Box Industry Expanding in Canada

Manufacturing Operations Expected to Commence Shortly At New Plant of London Paper Box Co., Which Is Practically Completed—Automatic Paper Box Co., of Toronto, Purchases New Plant for Additional Production Facilities and Space

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., April 25, 1932—The Automatic Paper Box Company, John street, Toronto, is reported to have closed purchase negotiations by which they take over a comparatively new factory building built for Smith Bros., automobile body manufacturers, on Logan avenue, Toronto. The paper box firm will move to the newly acquired plant where they will have much additional manufacturing facilities and space. The new plant is 170 x 120 feet, one story high and is reported to be well adapted for paper box manufacturing purposes. With brick work practically completed, several sub-contracts have been let by the London Paper Box Company, Montreal. Manufacturing operations are expected to commence this Spring.

Canada Sand Papers to Operate

Canada Sand Papers, Ltd., Preston, Ont., recently organized to manufacture sand paper, abrasive papers and materials, have taken property there with about 25,000 square feet of space. Manufacturing operations will commence at once. F. F. Stark, formerly connected with Abrasives, Ltd., Brantford, Ont., is manager of the new company. S. B. Grimes and W. M. Grimes will be in charge of the plant.

Can't Force Mills to Run

"This company has four mills in Ontario which are closed down. We can't force them to run here, so I really don't see how we can help the Manitoba mill," declared Hon. William Finlayson, Ontario Minister of Lands and Forests in the Legislature. Mr. Finlayson was referring to a speech made by John T. Haig, Conservative member for Winnipeg, in which Mr. Haig charged pressure from the Ontario Government led to the closing down of the Pine Falls plant of the Manitoba Pulp and Paper Company. "The news print business is off. Consumption has fallen away and there is not enough work to keep the mills operating. We would like very much to be able to have the company keep running but have no power to control them to do so," Mr. Finlayson declared.

McAdam Joins Ontario Paper

Bruce McAdam has joined the forces of the Ontario Paper Company as ground wood engineer at Thorold, Ont. In 1928 Mr. McAdam went to Kapuskasing where he served in the ground wood department of the Spruce Falls Power and Paper Company and was located there during the construction period and before the mill commenced operation. While there he exhibited a keen interest in industrial and technical education and had the entire charge of the industrial classes devoted to mechanical pulp and wood preparation.

Louis Bouvier Passes On

The death took place in Toronto a few days ago of one of the best known paper men in Ontario in the person of Louis Peter Bouvier, president of the L. P. Bouvier Corporation, Ltd., envelope manufacturers. Deceased was born in Quebec and educated in Vermont, following a business career in Holyoke, Mass. Coming to Toronto in 1899 he joined the firm of Barber-Ellis Company, Ltd., and while there he invented and patented the Reliance envelope machine. He then began as an envelope manufacturer. He is survived by his widow, a daughter, and one son. A brother resides in Rochester.

Notes and Jottings of the Trade

Louis Lemieux, of Montreal, tariff expert of the Canadian paper trade, was in Toronto a few days ago calling upon a number of the paper merchants.

Many friends in the Ontario paper trade sympathized with the family of F. G. McElroy, of Montreal, one of the executives of the Montreal Coated Paper Company, who died suddenly in that city. The late Mr. McElroy was well known throughout the Ontario paper trade.

The Reliable Paper Box Company, which operated in Toronto for a number of years, and which has been in financial difficulties for some time, was recently sold at public auction.

The Charles V. Sprett Paper Company, wholesale paper merchants, which recently went into liquidation, has been closed up, the remaining stock having been taken over by the Fred L. Ratcliff Paper Company. W. J. Meridew, vice-president of the old Syrett company, is now with the Ratcliff company.

H. P. Stockwell Jr., has resigned his position as chemist at the Kenogami mill of Price Bros. Company, and may be reached at Stanstead, Que.

W. G. Cuttle, formerly resident engineer for Ste. Anne Paper Company, Beaupre, Que., is now production manager of the Cellophane Division of the Canadian Industries, Ltd., Shawinighan Falls, Que.

J. C. Nutter, formerly with the research department of Price Bros. Company at Quebec, is now with the Canadian Paperboard Company at Toronto.

R. W. Lyons, manager of the woods department of the Spruce Falls Power and Paper Company at Kapuskasing, Ont., has been giving a series of lectures to the students of the Faculty of Forestry at the University of Toronto on the "Economic Aspects of Pulpwood Logging."

W. H. Smith, assistant managing director of the Abitibi Power and Paper Company, is spending some weeks in Jamaica for the benefit of his health.

The Scott Paper Company of Canada, Ltd., Brittain street, Toronto, Canadian subsidiary of the Scott Paper Company, has discontinued operations. The company however, is still maintaining Canadian representation.

Port Royal Pulp and Paper Company, Ltd., has been granted a federal charter to carry on business as manufacturers and dealers in papers, paper material, cord board, straw board, etc. The headquarters of the firm will be in Quebec.

The Albert Paper Company of Montreal, was recently granted a charter to deal in and manufacture all kinds of paper and paper supplies. The capital stock is $20,000 and among the incorporators are Samuel Chait, Harry B. Fogul and Moses Bauman, of Montreal.

Construction of a commercial plant at Copper Cliff, Ont., to produce sodium and aluminum sulphates, is contemplated by Canadian Industries, Ltd., 1050 Beaver Hall Hill, Montreal, which is having plans prepared by its engineering staff.

Activities of Fox River Valley Paper Mills

Production Record Broken In March At Marathon Tissue Mill, Ashland — Converting Unit Running At Full Capacity, With One Hundred Employees Added Since Beginning of Year—New Fourdrinier Machine Ready At Thilmany Plant, Kaukauna

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., April 25, 1932—Reforestation activities of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., will be expanded materially in the immediate future through the purchase of 1,840 acres of cutover lands in Forest County, in the heart of the Northern Wisconsin timber area. The lands were tax delinquent and sold by the county.

Much of the land is low, making it ideal for the growing of spruce, balsam and hemlock. It is located on two trunk highways and on two railroads, making it convenient for logging in later years. Additional tracts will be purchased as soon as it is possible for Forest County to deed them over.

The company eventually hopes to have enough trees under cultivation to supply its major needs. Pulpwood is now being rafted across Lake Superior and shipped to mills by rail from Ashland, Wis. A large acreage in the vicinity of Wisconsin Rapids and in Langlade County has already been planted by the Consolidated Forestry Department.

Marathon Tissue Mill Busy

Productions of the Marathon Paper Mills Company converting unit at Ashland, Wis., were broken in March, when 123,000,000 napkins were turned out. The tissue mill has been run at full capacity and is falling short of the needs of the napkin division because of the large amount of orders on hand. Nearly one hundred employees have been added since January 1, according to Ben Metternich, mill manager. The mill has been operated Sundays in order to step up production.

Paper Chemistry Institute Awards Contract

Immel Construction Company, Fond du Lac, Wis., has been awarded the general contract for the new administration building of the Institute of Paper Chemistry at Lawrence College, Appleton, Wis. Work will be started at once with the hope of dedicating it when the college term opens next Fall.

The building was made possible by a gift of $100,000 from J. C. Kimberly, vice-president of the Kimberly-Clark Corporation, whose father, the late J. A. Kimberly, former president, was one of the earliest students at Lawrence College and a pioneer in paper manufacture.

Plans prepared by Chester H. Walcott, Chicago architect, provide for a building 78 by 41 feet in size, two stories and basement. It will be of Lannon stone in colonial architecture, with a high pillared porch and a cupola with clock. Offices, reading and recreation rooms, research and experimental laboratories, photographic rooms and work rooms, will be located in this building. The first building erected last year at a cost of $250,000 is occupied largely by the miniature paper mill and other equipment for experimental manufacture. Orbison & Orbison, engineers of Appleton, are the local supervisors and engineers.

Thilmany Resumes Operations

The sulphate plant of the Thilmany Pulp and Paper Company, Kaukauna, Wis., has resumed operations now that the paper machines moved from the tissue division at Appleton, Wis., and the new Fourdrinier machine are in place and ready for operation. The mill will operate eighteen hours a day for the present, with 150 men on six hour shifts.

James R. Simpson Joins Champion Coated

James R. Simpson has resigned as mill manager of the main mill of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., in order to accept a responsible executive position with the Champion Coated Paper Company, Hamilton, Ohio. He began work with the Consolidated mill in 1921 as machine room superintendent and was later promoted to mill manager. His successor will be Lyman Beeman, who began with the company in 1922 with the ground wood division. He has been technical director of the four Consolidated mills in recent years.

Forest Fire Vigilance Increased

Because of abundant snow and heavy rains, Wisconsin has been free from the forest fires that caused heavy damage in the Spring a year ago. Vigilance also has been increased materially, and many miles of fire lanes have been constructed. Figures for last year show that there were 2,340 fires which devastated an area of 640,979 acres. Actual timber losses were estimated at $500,000, plus the damage to new forest life on cutover lands.

Not a Man Out of Work in All Gilman

An associated Press dispatch from Gilman, Vt. says:—"Prosperity stands firmly entrenched on a corner of Gilman's main street. Back in the hills of Vermont near the headwaters of the Connecticut River, far away from depression, money rates, bank failures and stock market and business downfalls, Gilman has enjoyed two years of peace and prosperity. Its leading mill, the Gilman Paper Company, is working triple shifts twenty-four hours a day, six days a week. The Millet Corporation, manufacturers of fiber material and onion bags, is working double shifts full time, and the Craft Bag Corporation, a new industry, plans to locate in Gilman shortly and turn out sixty tons of paper cement bags a day. There's not a man in town out of work."

Tissue Manufacturers Meet at Utica

[FROM OUR REGULAR CORRESPONDENT]

UTICA, N. Y., April 25, 1932—A meeting of tissue paper manufacturers from all sections of this country and Canada was held here during the week for the purpose of discussing the formation of a trade organization. Herbert Thwaite, general manager of the Tissue Paper Manufacturers Association, presided at the gathering during which trade conditions came in for considerable discussion.

It was announced following the meeting that this city will be the central meeting place for the manufacturers, if it is decided to form an organization, in order to hold general conferences every few weeks. Many of the manufacturers were not represented at the meeting because of other business engagements.

Boston Paper Market Exhibits Irregular Trend

Uncertainty of General Business Conditions Retards Activities In All Standard Grades of Paper —Demand for Fine Writing Paper Improves Towards End of Week—Specialties Moving In Seasonal Volume—Box Board Prices Easy

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., April 25, 1932—The volume of paper sold in this market the last week has been hardly better than fair, according to statements in the trade. Possibly the Jewish holidays have had some influence on the amount of business transacted. Practically all purchases are made on a hand-to-mouth basis, but the trade is generally hopeful. In fine writing paper, the market was quiet in the early part of the week, at least in some quarters, but improved in the latter part. The uncertainty of business conditions as a whole, however, has been a factor in retarding activity in all lines, both fine and wrapping paper. The seasonal demand for specialties is fairly normal. Box board is moving in average amounts. Reductions in prices recently made by the clay-coated mills on box board, varying with the caliper thickness, continue in effect. Chip board is quotable at $25.00 and single manila lined chip at $35.00, the base price for caliper .018 and heavier.

The paper stock market continues generally quiet. Most of the price revisions are downward. In old papers No. 1 soft white shavings are quotable at 1.40 @ 1.60, compared with a previous range of 1.50 @ 1.60; solid ledger books at 1.30 @ 1.50, compared with 1.40 @ 1.65; overissue ledger stock at 1.15 @ 1.30, compared with 1.35 @ 1.60; mixed ledgers at .90 @ 1.10, compared with 1.00 @ 1.15, and overissue news at .35 @ .45, compared with .40 @ .45.

In bagging foreign gunny No 1 is quotable at 1.00 @ 1.10, against a former range of 1.10 @ 1.15; domestic gunny No. 1 at .70 @ .80, against .75 @ .85; foreign manila rope at 1.40 @ 1.60, against 1.25 @ 1.50; domestic manila rope at 1.55 @ 1.75, against 1.50 @ 1.75; mixed string at .30 @ .35, against .30; jute carpet threads at .35 @ .50, against .40 @ .60; new burlap cutting at .75 @ 1.00, against 1.00 @ 1.25, and Australian wool pouches at 1.25 @ 1.50, against 1.50.

News of the Trade

Arthur E. Ham & Sons have become exclusive agents in Boston for Millers Falls Onion Skin, manufactured by Millers Falls Paper Company, Millers Falls, Mass. This paper, watermarked, of Substance 9, is a new line of rag content paper, stocked completely in white, canary, green, blue, cherry and goldenrod, with cockle, glazed and dull finishes. This paper is attractively priced, to meet today's conditions.

Arthur E. Ham & Sons are also distributing Worthy Brochure, a new line of the Worthy Paper Company, West Springfield, Mass. A distinctive book of samples demonstrates the use to which this line of paper may be put in direct mail advertising. It is made in both Laid and Wove in white, buff, green, blue and yellow.

There is a deckle edge on the long way of the sheets. Wove, stocked only in Natural shade, has a mellow tone and "feel" which commend it for use in folders, brochures and books.

Carter, Rice & Co. Corp. are featuring attractively in their office and display window the new Strathmore wedding display apropos of the June wedding season, fast approaching. The showing is supplemented with various boxed items in this grade and other material. The displays are being distributed to various engravers and other concerns handling wedding announcements, and have been arranged in a very artistic manner.

Carter, Rice & Co. will soon distribute to a selected list of printers and advertising agencies through New England a binder containing complete samples of the lines developed by the Hurlbut Paper Company, for which they are exclusive New England agents. Included with these will be information in regard to Hurlbut's Cragbourne 4-size deckle edge papers, which the distributors claim are conceded to be the newest and most individual line of paper manufactured in America today for advertising usage. A price list is given in the front of the portfolio. Sheets of generous size have been used so that both the printers and advertising agencies can easily visualize their own particular problems.

The Falulah Paper Company, Fitchburg, Mass., have mailed to the trade samples of colored coated cardboards, sometimes called "railroads." The samples, bound together in such a way as to resemble a fan when "spread open," are in fawn, gray, buff, salmon, pearl, orange, blue coral, green, yellow, and red. A letter is on each sample, so that the words "Fast To Light" are spelled. These Falpaco lines are color coated one or two sides.

The Arnold-Roberts Company have become distributors of Waterfalls Text and Cover, made by the Waterfalls Paper Company, of Mechanic Falls, Me., whose executive offices are in New York City.

Members of the sales department of Stimpson & Co. were guests of Frank W. Hunt, local representative of the Individual Drinking Cup Company, at the Hotel Manger, April 15. About forty were present. Warren L. Chace, treasurer of Stimpson & Co., local distributors of the products of the Drinking Cup Company, presided and introduced Mr. Hunt as speaker of the evening.

Bird & Son, Inc., roofing and paper board manufacturers, East Walpole and Norwood, Mass., and Phillipsdale, R. I., are to close their Boston office, as of May 1. The Boston district sales will be handled from East Walpole by the same personnel. Purchasing Agent A. H. Russell, who came to this office Wednesday morning, is to make occasional trips to Boston.

S. L. Evans, of the sales department of Arnold-Roberts Company, is receiving words of sympathy on the death of his father, Robert E. Evans, who died at Winthrop, Mass., April 19.

Treasurer Allen, of Knight, Allen & Clark, who has been ill of influenza, is able to return to his office.

The Morgan Ellis Company has leased the first and second floors, each containing 10,000 feet of space, in the building at 43-45 Farnsworth street, South Boston.

Frank Wagner, of the S. D. Warren Company, gave a technical talk on "Paper, Type and Ink" at a recent meeting of the paper committee of the New England Purchasing Agents Association.

A merger of four of the paper stock companies of Boston and vicinities is being discussed.

Delaware Valley TAPPI Discuss Mill Waters

The fifth regular monthly meeting of the Delaware Valley Section of the Technical Association of the Pulp and Paper Industry was held at the Engineers Club in Philadelphia on April 21, 1932.

William R. Maull Presides

Following the dinner William R. Maull, vice president of the Dill & Collins Company, and the chairman of the Section, introduced E. N. Wennberg of the Continental-Diamond Fibre Company who presented a paper entitled, "Preparation of Paper Mill Waters." This paper described the various uses for water in a paper mill, the quantities needed for various purposes and the methods of treatment used. He also brought out the problems encountered by the changing conditions of water. A review of sedimentation and coagulation methods was given and also some comments on handling hard water.

Dr. G. E. Landt Presents Paper on Waste Waters

Dr. G. E. Landt of the same company then read a paper on "Waste Waters." In his paper Doctor Landt stressed the necessity of a mill returning water to a river in a condition that shall not prove harmful to other enterprises down stream and not endanger fish life. Data on the quantities of water used by Pennsylvania mills was given as well as performance figures for various types of save-alls.

Christian A. Seibert Speaks

Christian A. Seibert, executive engineer of the Pennsylvania State Sanitary Water Board was present and explained the purpose of the Board and its relation to the problems of natural waters in Pennsylvania, and the importance of such waters for drinking purposes.

He explained the classification of streams as to pollution or lack thereof, and the effort to reduce as far as possible by treatment or diverting of wastes. He illustrated with charts and maps the work covered by the Board and the immense improvement effected. It was explained how the effort of cooperative work was the primary policy of the Board and that to date the paper industry has cooperated with the Board to the fullest extent.

Mr. Gray on Cooperation

Mr. Maull also introduced Mr. E. F. Gray, field engineer of the Sanitary Water Board, who also spoke of the friendliness and cooperation of the paper industry.

H. C. Knerr Speaks on Waste Problems

H. C. Knerr, consulting engineer, was introduced and spoke of the waste problems of other industries, namely, the metal foundry work in which he is interested. He illustrated how their study of stream pollution from the plant had brought about a saving of many thousands of dollars and had produced other operation economies through the reuse of waste liquors.

Problems Discussed

The meeting was opened for discussion and to start Mr. Maull asked the cause of purification of sewage in rivers and streams. Mr. Seibert answered that the action of the stream brought about oxidation and agitation. To further illustrate, Doctor Landt cited the situation developed on the Illinois River when discharge of sewage from Chicago was acually purified in passage down the river.

Ralph W. Shaffer of MacAndrews & Forbes Company was asked to explain their method of white water reuse and described the segregating of effluent, passing through save-all and reusing. Felt shower water is handled separately in the same manner with makeup water taken from the main white water system after passing through save-alls and chlorinated. White water shows before save-alls 4 pounds per thousand gallons and after 2.2 pounds per thousand gallons felt shower water shows after treatment about 0.6 pounds per thousand gallons.

L. M. Booth of the Booth Chemical Company, stated his experience in investigations with C. M. Baker of the American Paper and Pulp Association, and believes that it is important to do all possible to cut down the gallons of water per ton of paper made, with effort to keep raw water quality uniform at all times.

In response to Doctor Landt's question as to whether pH of water has an effect on beating and paper color, J. Carl Schmidt of Du Pont stated that it did, depending on the kind of dye used. A. W. Wickham of MacAndrews & Forbes advised that his mill must run one grade of stock distinctly alkaline to obtain hydration.

Those Who Attended

Those who attended included the following: E. J. Albert, Thwing Instrument Company; F. McAndrews, McDowell Paper Mills; Alan R. Boyd, F. C. Huyck & Sons; L. M. Booth, Booth Chemical Company; H. P. Cannon, Container Corporation of America; H. D. Childers, Thomas M. Royal Company; F. H. Cronin, Yorklyn, Del.; G. H. Detwiler, Heller & Merz Corporation; J. P. Gray, Pennsylvania Sanitary Water Board; S. M. Hesser, Hinde & Dausch Paper Company; H. H. Hanson, W. C. Hamilton & Sons; W. C. Jay, Sanitary Products Corporation; V. Jacobson, National Aniline & Chemical Company; H. C. Knerr, Philadelphia, Pa.; C. J. Kern, Moore & White Company; G. E. Landt, Continental-Diamond Fibre Company; G. B. Martin, General Dyestuff Corporation; M. Craig Maxwell, McDowell Paper Mills; Charles McDowell, McDowell Paper Mills; W. R. Maull, Dill & Collins Company; F. S. Newton, A. M. Collins Mfg. Company; C. W. Rivise, Philadelphia, Pa.; S. D. Reynolds, Container Corporation of America; J. Carl Schmidt, Du Pont Company; W. M. Shoemaker, National Vulcanized Fibre Company; H. C. Schwalbe, Dill & Collins Company; E. T. Street, Downingtown Mfg. Company, Downingtown, Pa.; Frederick Streicher, Dill & Collins Company; R. W. Shaffer, C. A. Seibert, Pennsylvania Sanitary Water Board; E. N. Wennberg, Continental Diamond Fibre Company; A. H. Wickham, MacAndrews & Forbes Company; F. E. Winslow, General Electric Company.

Hoberg Perfects Borating Process

The Hoberg Paper and Fibre Company, Green Bay, Wisconsin, has recently perfected a new process for borating its line of paper towels and toilet tissue. This process gives these products the protective qualities of boric acid, which, the manufacturer points out, is so gentle that it is prescribed as an eye-wash, although it possesses strong antiseptic powers. The borating process, which is now being applied to all of this company's towels and toilet tissues, was developed only after many months' research, according to a recent announcement. It is designated as "The Evergreen Borated Process."

Planning for the Future of News Print

By Stanley T. Frame[1]

BOSTON, MASS., April 25, 1932

EDITOR PAPER TRADE JOURNAL:

I am taking the liberty of sending you herewith a brief summary of a plan aiming at stabilization of the news print industry. I am sending it to you in the hope that you may consider publishing it in the PAPER TRADE JOURNAL, either in its present form or in some other form more suited to the requirements and policy of the PAPER TRADE JOURNAL. This particular article is a summary of longer and more detailed analysis of the news print industry which I have written chiefly from the point of view of planning and stabilizaton.

The Harvard Business School is very much interested in the problems of planning and stabilization. The development of better control over industry is a business problem with far reaching social implications. My reason for asking you to consider printing this article is that it appears imperative to reach in some way the men who are actually in control of the industry, who have much at stake in the industry, and who determine to a large extent the future of the industry.

STANLEY T. FRAME.

No one in the news print industry regrets the passing of the years 1930 and 1931. The ills which had been accumulating progressively since 1926 struck with full force in the last two years. The whole industry is laboring under excessive difficulties on account of the over-rapid extension of capacity. Profit margins in a number of cases have dwindled almost to the vanishing point, and two major producers were forced to seek either reorganization or receivership as a relief from pressing burdens. The picture is indeed a black one.

The vital question is: What can be done to get out of the present plight? How can the industry be restored to a normal working relationship between effective producing capacity and current consumption? Any satisfactory answer must be in terms of long-range planning rather than in terms of make-shift measures aiming at immediate solution of the major troubles. However much we may wish it, a stable and well-running news print industry cannot be hoped for in 1932, and probably not even by 1933 or 1934.

The causes are one which have been operating for several years, although the effects were not apparent until 1930. These effects cannot be minimized or eliminated in a period of less than several years, and probably complete readjustment will not have occurred even at the end of this decade

The boom years from 1925 to 1929 saw a prodigal flow of capital for conversion into news print mills. News print company executives visioned both a circulation and an advertising volume growing at the same rapid rate as between 1921 and 1925. New mills were built in anticipation of large annual additions to consumption. These mills are modern, expensive, excellently located, equipped with wider, faster Fourdriniers and improved sulphite plants. In the meantime demand was definitely receding, although the full realization of declining consumption did not occur until the great industry-wide expansion was over.

[1] Harvard University, Graduate School of Business Administration.

Futile to Control Production and Prices While Capacity is Unregulated

There is no person sincerely interested in the betterment of the industry, who would deny the desirability of finding some effective and acceptable way of restoring the manufacture of news print to a sound, profitable basis. The ultimate objective is a price for the product which will permit operations on such a level as to be advantageous both to news print mills and the newspaper publishers, who are the only consumers of news print.

Sound methods used to obtain this objective undoubtedly will not include regulation of production through the allocation of orders by any centralized agency. Whatever may have been the merits of the News Print Institute, it is certain that the Institute failed its purpose. In the first place there was too great a pressure behind individual members to get all the production they could in order to operate at a capacity which would at least cover fixed charges and bear as much as possible of the burden of current expenses. This internal dissension among its members was bred out of dissatisfaction with the production quotas allocated. It is submitted that the Institute could never have succeeded in satisfying its members and at the same time maintain a reasonable total production that would have prevented prices from breaking. In the second place, a single consumer group was so powerful and important as an outlet for production that it became at least the immediate cause of disruption. Thirdly, anti-trust legislation and sentiment in the United States were unfavorable. These three factors are cited not so much for the purposes of reviewing the causes for the downfall of the Institute, but to indicate the weaknesses inherent in any centralized agency which tries to maintain production and prices while effective capacity remains unregulated.

A Broad Foundation for Planning Already Exists

A broad basis for planning is already established in the industry. This is the most essential fact for us to grasp.

A careful survey of the whole set up of the industry leads to the conclusion that very favorable fundamental conditions now exist for planning the future on a more stable and profitable basis. But it is only by taking advantage of this fortunate condition and exploiting it to the utmost that any permanent betterment will take place.

The idea fixed in the minds of some that present ills must be allowed to run their course for an indefinite period, or that improvement must wait upon better conditions in general business, represents the "council of despair." The industry can ill afford to depend on such contingences for its rehabilitation.

It is time for us to draw up a balance sheet for the whole industry and begin a very thorough analysis of the principal asset and liability accounts. We shall examine the liabilities first.

The key figure among the liability accounts is the 2,250,000 tons of idle capacity in 1931. News print mills in the United States and Canada were 40 per cent idle, with a

continental capacity of 5,700,000 tons[2] and a continental consumption of only 3,450,000 tons. With an estimated total investment of over $800,000,000 for the whole industry, calculated on a conservative capitalization per ton of daily capacity, 40 per cent idle capacity means nearly one third of a billion dollars of profitless investment. Calculated at 6 per cent ,the loss on this huge investment is close to $20,000,000 a year.

The other liabilities to be reckoned with are by no means so serious. The most important of these is too much financing by means of bonds, which require a heavy outgo in the form of fixed charges. To some extent this explains the reason for no surplus account on this side of our balance sheet. The pressure to keep going in order to earn enough to cover fixed charges is a partial explanation as to why cooperation in the industry has been so long delayed. Another liability account comes under the heading of risks and burdens of forest ownership. This account is of a long-time nature, and applies specifically to conditions in the United States. The desire for size together with jealousies between both companies and individuals have their place in this picture also, but the two greatest immediate liabilities are idle capacity and the method of financing.

On the asset side of the balance sheet we note the fact that the members of the industry have many important problems in common. The solution of these problems on a unified basis would therefore tend to bring direct benefiits to the groups concerned. Consider first the great similarities among news print companies with respect to the fact that the same type of raw materials are used by the bulk of the industry, that the problems of transporting logs to the mill are identical in many cases, that the same processes and equipment are used. Consider the fact that the final product is highly standardized and that news print is confined to a single market, and that this market is relatively incapable of expansion. Finally consider the fact that other industries are far less fortunate than news print because they are beset by substitution by products of other industries. Those industries, the various fuels and building materials for example, cannot even define their markets or make a very satisfactory forecast of total consumption. Thus far news print has been immune from large-scale substitution. Furthermore the market, or total demand for news print, is predictable within a fairly small margin of error.

A second very important asset is concentration of ownership in the hands of comparatively few large companies. Control over capacity is highly centralized in Canada, where six companies out of a total of 19 own three quarters of total Canadian capacity. In the United States the six largest companies control 60% of the capacity.

News print companies have large investments at stake The paradox is that these companies as a group have entirely failed to meet their problems on anything like a unified front but have elected the path of destructive and ruinous competition as the way out of the individual company's problem. No single company has been able to assume any constructive sort of leadership because of the great possibility that it would have no followers.

News print companies are linked together by other means than direct corporate ownership. Banking connections, particularly in Canada, have been close. At the end of 1930 it was estimated that bank loans to Canadian news print mills amounted to approximately $39,000,000, the largest single loan of $15,116,000 having been made to the former Canada Power and Paper Company. The Canadian provincial governments are particularly interested in the welfare of news print since it is Canada's largest manufacturing industry and since a large population group is entirely dependent on the industry.

In addition to these assets, there is one other asset which is of particular value in planning for stabilization. This is the established fact that news print consumption fluctuates to a much smaller degree than that of most commodities. In fact, the demand for news print was only 15 per cent less in 1931 than in the yeak year of 1929.

This remarkable stability is caused largely by the fact that newspapers are a commodity of low unit price and of very widespread consumption. It is to be remembered that the newspaper has a direct commodity value to the advertiser in the distribution of merchandise and that the advertiser subsidizes to a large extent the cost of the newspaper. If the newspaper were nothing more than an advertising medium, news print requirements would fluctuate with the swings of retail business. The newspaper, however, is primarily a vehicle for news, and the demand for news is remarkably stable. It is this feature, expressed in terms of circulation, which helps to maintain news print consumption on an even level. It is this feature which counteracts the effects of the fluctuations in newspaper advertising volume. The important aspect of this situation in the present depression is that newspaper publishers have not and probably cannot reduce the amount of news text in the same proportion as the decline in advertising space. Therefore, it appears that a certain number of pages per issue is demanded by the newspaper reader and the publisher cannot go below this minimum.

What This Means in Terms of Planning

What does this mean in terms of planning on the part of the industry? It means one very important thing: the whole stage is set and the whole background is prepared in such a way as to assure successful, stable operation which is waiting for constructive and cooperative action.

The news print industry has reached maturity. That is to say, the market for news print is pretty well saturated We know this because circulation of newspapers is approaching its limits, and there is weighty evidence that newspaper advertising will not show such phenomenal increases as in the past. The rising curve of news print consumption receded for the first time in 1927, and after reaching a peak in 1929, turned downward in 1930 and 1931. This was the first time that consumption had shown a decrease in two successive years. With the demand for news print established on a much more even keel than heretofore, there should be every confideince that consumption can be forecast with reasonable accurracy.

Estimate of Newsprint Consumption in the United States, 1932-1940

An attempt is herewith made to estimate carefully the probably course of annual news print consumption in the United States from 1932 to 1940. The estimate is limited to the United States because it is by far the most important market for news print in the entire continent. Moreover, the existence of most of the Canadian capacity is predicated on this one market. The estimate is shown in the chart.

Rather than try to make a single estimate of news print consumption for each year from the present to 1940, it is probably better to make reasonable estimates for maximum and minimum amounts each year. The upper dotted line extending from 1932 to 1940 represents maximum

[2] The capacity of 5,700,000 tons referred to includes Newfoundland, while the 40 per cent idle refers only to Canada and the United States. Newfoundland mills ran practically full. Moreover, no allowance is made for Canadian and Newfoundland overseas exports which total 150,000 tons.—Editor, PAPER TRADE JOURNAL.

reasonable consumption, and the lower dotted line represents minimum reasonable consumption.[3]

What the Chart Means

Present facilities are not only 1,800,000 tons in excess of actual 1931 consumption in the United States, but they are 900,000 tons in excess of the estimated maximum consumption for the year 1940.

The space between the two lines thus projected is the area within which we may reasonably expect news print consumption to fluctuate. The horizontal line indicates existing capacity of 5,100,000 tons per annum. This capacity is a net figure after making deductions for Canadian consumption, Canadian exports to countries other than the United States, and similar exports from Newfoundland. This net capacity of 5,100,000 tons is that capacity which is competing for markets in the United States. Of course, some of the present idle capacity will go out of existence on account of obsolescence and physical depreciation. However, it is hazardous to rely on this slow operating factor to solve the problem of excess capacity on any satisfactory basis.

What the Planning Involves

Having recognized the actual background and the signal opportunities which it offers, the particular steps will be summarized briefly.

Action Recommended for the Industry as a Whole

1. Capacity must be reduced to actual requirements. This is the key to permanent improvement. To achieve this end, the following measures are necessary:
   a. No more mills should be built for some years to come.
   b. Concentrate operations only in existing low-cost mills.
   c. Close down and dismantle high-cost mills per-

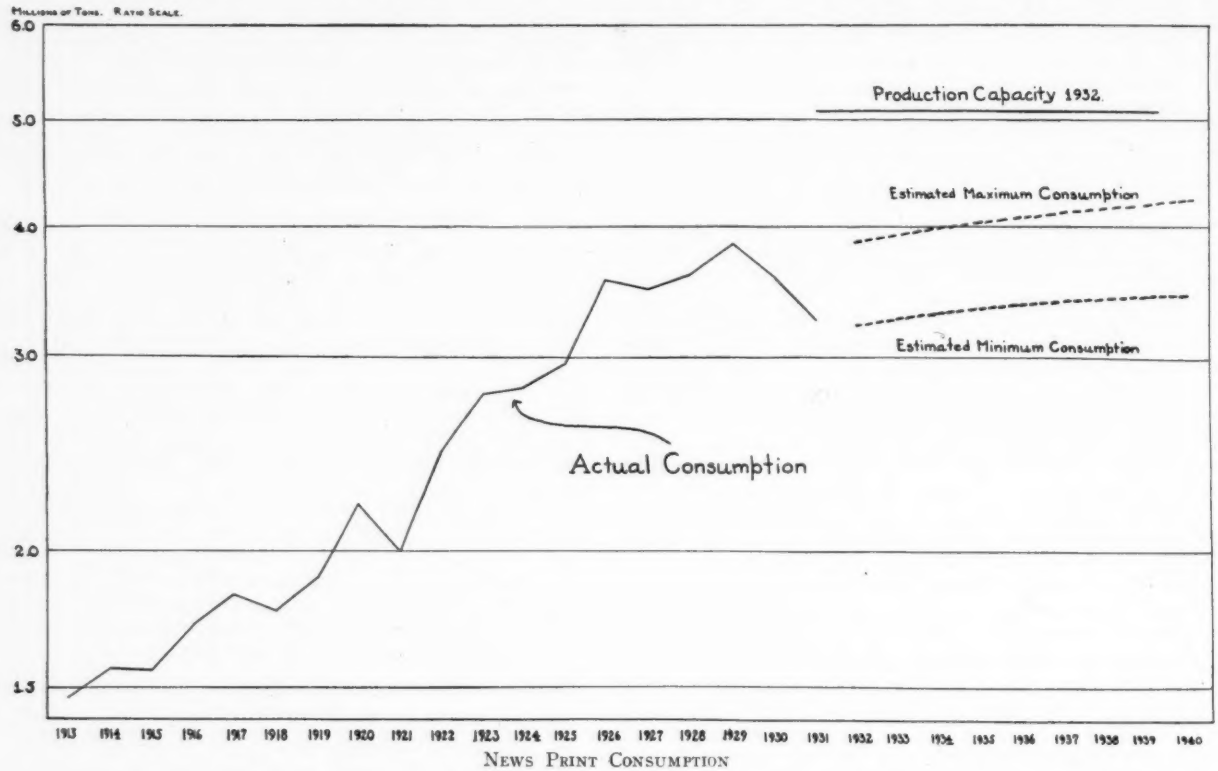
[3] The general method of arriving at these estimates is as follows:
For the maximum estimates, reasonable maximum prospective populations for the particular years in question were multiplied by reasonable maximum estimates of per capita consumption.
The same method, using reasonable minimum prospective populations and per capita consumption, was employed in getting the minimum estimates of total annual consumption.

Population 1932-1940

The estimates of maximum population are based on the calculations of Drs. Pearl and Reed of Johns Hopkins University, indicating a population of 136,318,000 by 1940. The estimates for minimum population are those of Dr. Louis I. Dublin, Vice President of the Metropolitan Life Insurance Company and indicate a population of 130,900,000 in 1940.

Per Capita Consumption 1932-1940

Recognizing that the per capita consumption of 62 pounds in 1929 was a heavy saturation of the market, that figure is taken as a maximum estimate for each of the years intervening between 1932 and 1940.
The relatively low per capita consumption of only 52 pounds in 1931 was taken as representing a minimum estimate for the years 1932-1940.



NEWS PRINT CONSUMPTION

The two following tables indicate the method of establishing the two estimates.

MAXIMUM ESTIMATE

Based on Maximum Populations and Maximum Per Capita Consumption of 62 pounds

Year	Population (millions)	Total Annual Consumption (thousands of tons)
1932	125.0	3,875
1933	126.5	3,921
1934	127.9	3,965
1935	129.4	4,011
1936	130.7	4,052
1937	132.1	4,095
1938	133.5	4,138
1939	134.9	4,182
1940	136.3	4,225

MINIMUM ESTIMATE

Based on Minimum Populations and Minimum Per Capita Consumption of 52 pounds

Years	Population (millions)	Total Annual Consumption (thousands of tons)
1932	124.4	3,234
1933	125.2	3,255
1934	126.0	3,276
1935	126.8	3,296
1936	127.6	3,317
1937	128.4	3,338
1938	129.2	3,359
1939	130.0	3,380
1940	130.9	3,403

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Layne & Bowler, Inc., Dept. M,
Memphis, Tennessee.

Send bulletins on Layne Pumps and LAYNE Well Water Systems which tell how LAYNE cuts the cost of water for Paper Mills.

Name .....

Address .....

The DAY the Water Tower Overflowed

¶ A few words changed — and this story of a Central Wisconsin town dying of thirst, might be the story of any one of many paper mills in the United States today.

¶ Hundreds of thousands of dollars had been sunk in well-water systems. It was a battle to squeeze 300,000 gallons per day out of them for the actual personal needs of the town's eight thousand.

¶ Big industries went there to build big factories. But the factories were built in other towns — towns that had water.

¶ Burned once . . . the town lived in dread of another fire that it wouldn't have enough water to fight.

¶ Certain engineers and geologists told the council: "It's impossible! You can't get enough well water. *It's not here!*

¶ News of the town's plight attracted Layne hydrological engineers. They investigated. Then they reported.

¶ *"We'll give you* 3,000,000 *gallons per day," they said. "We'll do it, or — you pay us nothing!"*

¶ They went to work. Three Layne gravel-wall wells and Layne pumps turned the trick.

¶ Three million gallons poured into the water tower . . . overflowed it! . . . the first time it had overflowed in all of its 25 years.

¶ That day . . . the day the water tower overflowed . . . saw the town handed a new lease on life. And it saw Layne *do* another one of those jobs that "can't be done."

FREE Complete descriptive bulletins on Layne Pumps and Layne Well Water Systems for Paper Mills will be sent to operators, superintendents and engineers of Paper Mills. Use Coupon.

LAYNE PUMPS

& WELL WATER SYSTEMS

LAYNE & BOWLER, INC. MEMPHIS, TENN.

manently. Sale of these inefficient mills at liquidation prices only provides a basis for reckless, shoestring competition at a later date.

2. Standing pulpwood should be subject only to such taxation as would place the revenues thus derived primarily on a "pay-as-you-cut" basis. This refers specifically to conditions in the United States.
3. A policy formulating group, representative of the entire industry, should be supported by all news print manufacturers for the purpose of promoting better cooperation and trade practices. It should supplement the fact-finding activities of the News Print Service Bureau.

Action Recommended for Individual Companies

1. Concentrate manufacturing in low-cost mills only.
2. Shut down and dismantle high-cost properties. The operation of inefficient mills or even the continued ownership of such mills in most cases undoubtedly entails a greater loss over a period of years than a complete dismantling and write-off.
3. The capital structure of particular companies must be reduced to a conservative level. Equity securities should be more widely substituted for funded debt. Although there will be losses involved much of the overcapitalization will have to be eliminated.
4. Analyze those factors affecting the volume of total news print consumption and relate them both to the company's customers and the effects on mill operation.
5. Establish reserves for the purpose of the major elements of cost, expressed in terms of labor, materials, and overhead. Separate reserves should be set up for each of these three classes of cost. A study of the internal control records of the company will indicate how much shall be set aside for each reserve. The purpose of the reserves is to absorb the effect of fluctuations in prices and in operations and to stabilize the company's finances.

Probably the most helpful factor in the present situation is the proposed consolidation of the six largest Canadian companies, representing three quarters of total Canadian capacity. Success for the prospective supermerger, however, is not to be hoped for on the basis of high news print prices, since retaliatory legislation might be passed in the United States under existing interpretation of the anti-trust laws.

To be of permanent benefit both to itself and to the whole industry, the following factors must be recognized:

1. The merger must include only low-cost efficient mills and thereby effect genuine savings. Costs must be low enough to permit profitable operations based on news print prices low enough to discourage speculative capital.
2. The constituent mills and properties must be merged equitably so as to prevent disaffection caused by the method of profit showing.
3. The capital structure must be strong enough to meet all reasonable contingencies.

The plan thus outlined, with its suggestions and implications, is offered in the hope that some rational basis for action has been presented for the earnest consideration of the industry.

Swedish News Print Production

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 28, 1932—Swedish news print production during February totaled 23,234 metric tons, an increase of 4,575 tons over January and of 7,978 tons over February of last year according to reports received here.

CANADIAN I. P. ACQUIRES MILLS

(Continued from page 9)

of the mill. This advantage is, as far as is known, enjoyed by no other news print mill.

Important Factor in Sulphite Industry

In addition to its news print mills, the Canadian International Paper Company is an important factor in the sulphite pulp industry. Its mill at Kipawa, Quebec, is the world's largest producer of rayon pulp. Its output is sold to rayon manufacturers throughout North America and Europe. The Company's other sulphite mill, located at Hawkesbury, Ontario, produces a high grade of bleached sulphite pulp, which is sold to manufacturers of book and other fine grades of paper.

Both the Canadian International Paper Company and its subsidiaries have carried out the International's established policy of having in excess of fifty years' supply of pulpwood in well located and readily accessible stands. Not only does this assure an adequate future supply of raw material at reasonable costs and perpetuation for the forests themselves, but also the protection of the communities dependent on the operation of these properties. The woodlands of the three companies have a total area of more than 29,321 square miles, of which 1,871 square miles are owned in fee and 27,450 square miles are held under Crown licenses. The total stand is estimated at over 83,000,000 cords of pulpwood.

Grouping for Maximum Efficiency

This transaction represents a further step in the program of the International Paper and Power Company for grouping its properties for maximum efficiency in operation and control. With a few exceptions all the properties now controlled are now divided into two groups:—in the first group, power and utility properties owned by subsidiaries of International Hydro-Electric System (the only important exception is the Newfoundland hydro-electric plant mentioned above); and in the other group, paper and pulp and other industrial properties, all owned by the International Paper Company and its subsidiaries. In the latter group, all the important Canadian and Newfoundland paper and pulp properties are now owned or controlled by the Canadian International Paper Company. All the common stock of the Canadian International Paper Company is controlled by the International Paper Company.

Pulp Import Situation Little Changed

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 27, 1932.—The United States Tariff Commission in a report which it has just made to the Senate under the McNary resolution states that in spite of the depreciated currency situation abroad no material change has been shown in imports into this country of pulpwood and wood pulp. Imports were somewhat larger from some countries the two volume report shows.

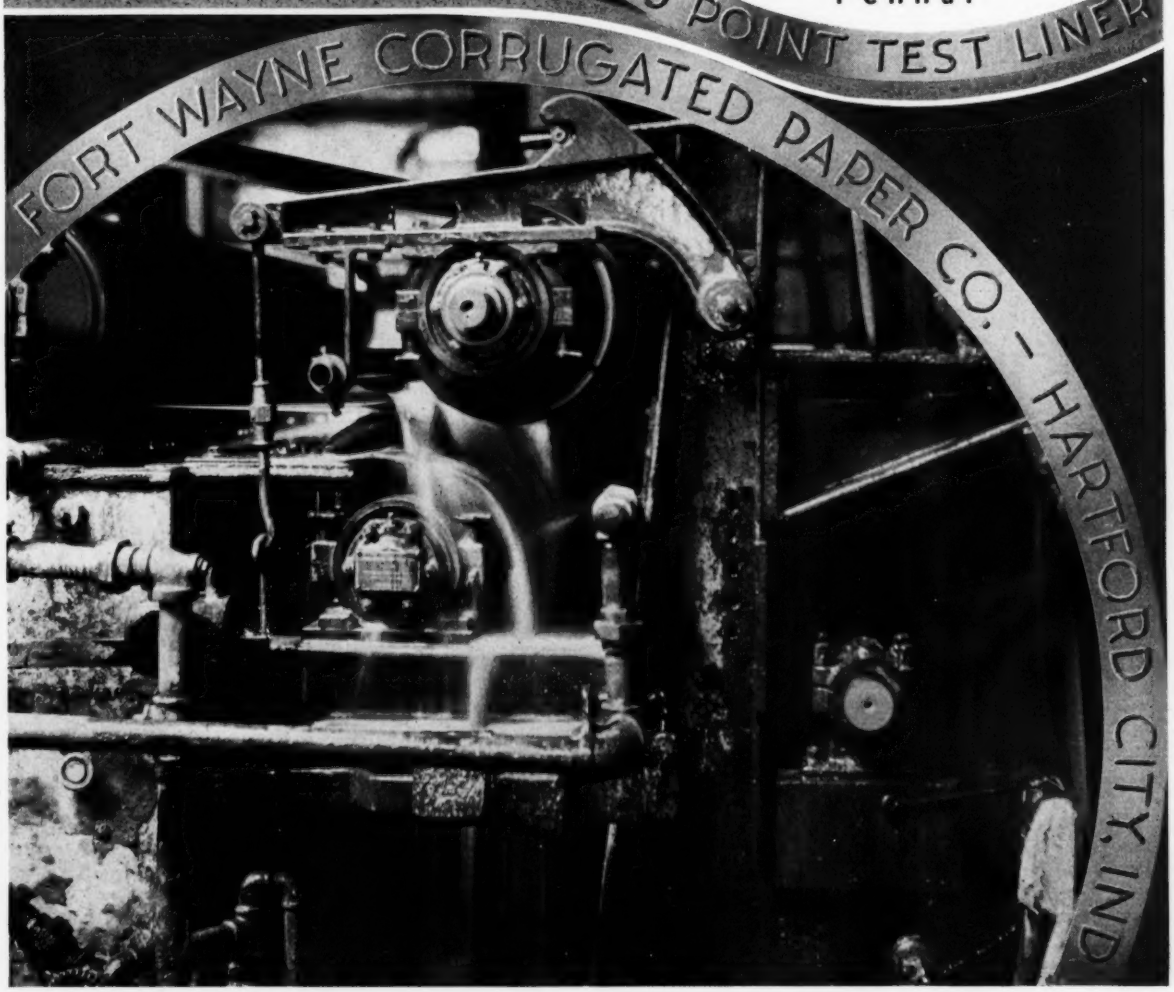
"Although imports during recent years," says the report, "have been a much higher proportion of domestic consumption of wood pulp than before the World War or immediately after the war, there was little change between 1926 and 1931 in the ratio of imports to domestic consumption."

Due to seasonal aspects of wood pulp imports, says the Commission, there is considerable difficulty in determining the extent to which any increase might be due to foreign currency depreciation with resulting improved competition position in the American market.

DOWNINGTOWN

EXTRACTOR ROLL ON 16 POINT TEST LINER

Extractors on high speed machines demonstrate their value in helping to maintain high speeds continuously, by removing large quantities of white water safely from the sheet before it enters the presses. All of the presses can now be heavily weighted without injuring the sheet in any way. The top felt stays cleaner, thus ensuring safer running of the machine. The Downingtown Manufacturing Co., Downingtown, Penna.



FORT WAYNE CORRUGATED PAPER CO. - HARTFORD CITY, IND.

New York Trade Jottings

Following the merger of the R. C. Kastner Paper Company with Paul E. Vernon & Co., the business of the former company has been transferred to 24-26 Reade street, New York, the address of the Vernon company.

* * *

Lily Tulip Cup Corporation, of New York, reports for the twelve months ended March 31 a net income of $547,813. This was equal, after preferred dividend requirements, to $2.83 a share on the common stock.

* * *

Peter J. Schweitzer, Inc., manufacturers of cigarette and tissue papers, etc., announce the removal of their office from 200 Fifth Avenue, New York, to their Elizabeth, N. J., mill, located at Newark Avenue and Virginia street.

* * *

The regular weekly luncheon and meeting of the Eastern Division of the Salesmen's Association of the Paper Industry was held at Allerton House, New York, on Monday. There was a round table discussion of prevailing business conditions in which most of those attending participated.

* * *

Racquette River Paper Company announces the removal of their office to larger quarters in the same building in which they have been located during the past seventeen years. The new address is Room 5,722, Grand Central Terminal Building, New York—Telephone numbers Murray Mill 2-3633-34.

* * *

Howard C. Barbour, for several years representing the Thew Shovel Company, of Lorain, Ohio, has recently become associated with the International Core and Cap Division of the International Paper Company of New York as sales representative. Mr. Barbour is well and favorably known among the mills of the pulp and paper industries, which he has closely contacted over a period of years.

New Bausch & Lomb Booklet Out

The Bausch & Lomb Optical Company, of Rochester, N. Y., has just issued a new booklet describing the Unified Slit Ultra Microscope, a new instrument to simplify the study of colloids. This instrument may be used for the study of any of the eight possible colloidal systems. Permanent alignment and simple adjustments recommend it alike to the industrial chemist and to the professor of chemistry.

The instrument consists essentially of an illuminator, illuminating microscope, adjustable microscope platform and a newly designed three-way mechanical stage. The optical bench is of one piece, precisely machined and extremely stable. At one end is mounted a clock-feed arc lamp with its condenser and centering screws. The condenser is permanently focused to image the crater of the arc on the slit of the illuminating microscope.

The illuminating microscope consists of an adjustable slit and an objective with rack and pinion motion for focusing the image of the slit in the collodial medium. The stellite jaws of the precision type adjustable slit are controlled by a micrometer screw graduated in tenths of millimeters. The slit may be varied in width and length and rotated through ninety degrees. The length adjustment is controlled by a V slide. The rack and pinion allows the smooth, precise focusing of the cone of light formed by the illuminating objective.

Indianapolis Demand Spotty

INDIANAPOLIS, Ind., April 25, 1932.—The outlook for the paper industry in this section during the coming month is somewhat controversial. The spotty condition remains and, of course, hand to mouth buying is the rule. The coming of the May primaries has stimulated business with some of the fortunate paper houses dealing with printers who have election ballot contracts having a temporary increase in volume. In the remainder of the fine paper market, there is little business. The larger advertisers, who each year generally send out piece after piece of direct mail literature, just aren't in the market this year. But they weren't last year either, so not much difference is seen.

In other fields of the paper industry there seems to be a little more optimism. Demand for wrapping paper and bags is fair, all things considered. Strong prices seem to have encouraged the buyers to get into the market. Demand for building papers also is on the increase and even though the building volume in Indiana will be low again this year, there will be a large amount of remodeling that will require building paper. A good prospect for a big volume of new roofing also is seen. Jobbers of insulating materials report a fair dealer demand and are predicting a better demand than a year ago.

The paper stock market still is in a bad way. With warehouses crowded and low prices, the paper stock men here are none too confident as to the future. They are buying only in small quantities and are paying the lowest prices in years.

Container men here are waiting patiently for the coming of summer and a return of the ice cream trade to the market. At present there is little demand, but stocks are not heavy either in the consumers hands or the manufacturers'. Much the same thing is true of the summer specialty lines. Some inquiry now is being received concerning prices that may be expected, but orders are slow.

Committee Against Pulp Tariff

WASHINGTON, D. C., April 27, 1932—The Senate Finance Committee on Monday voted not to place a tariff on pulp and pulpwood as suggested at recent hearings.

Pulp interests had asked for such a tariff but the newspaper publishers and others opposed it before the committee. There will be discussion on the pulp tariff amendment when it reaches the floor of the Senate and an effort made to insert it in the new tax bill.

A. K. Hinds Leaves Carthage Machine Co.

CARTHAGE, N. Y., April 26, 1932—Arthur K. Hinds, vice president and manager of the Carthage Machine Company for the past ten years has resigned.

Prior to going with the Carthage Machine Company, Mr. Hinds was engaged in paper mill engineering and construction and was associated for several years with George F. Hardy of New York.

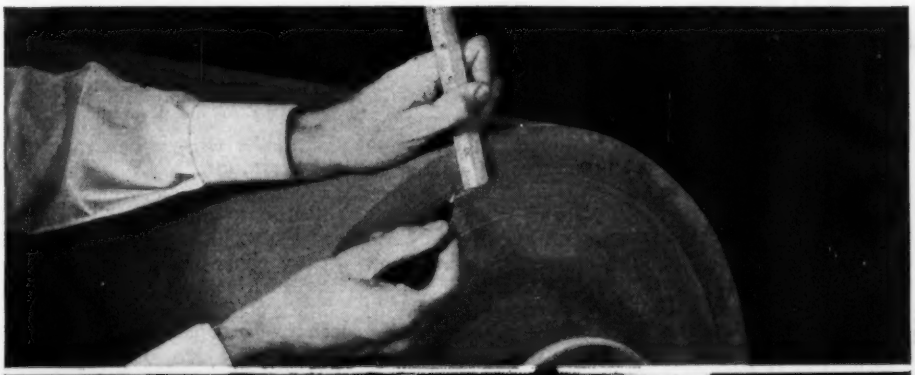
Mr. Hinds is to become associated with the Climax Manufacturing Company of Castorland, N. Y. June 1.

Unity Paper Mills Resume

POTSDAM, N. Y., April 23, 1932.—The Unity Paper Mills resumed operations this week after being shut down for the past several weeks. It was announced that the company now has sufficient orders to insure steady operations for some time ahead. Operations were suspended recently when orders fell off but a noticeable improvement in business conditions has resulted in the recall of virtually the entire working force.

Buy Rolls by the Amount of Cushion . . .

Only Goodrich can make Vulcalock rolls. For Vulcalock is an exclusive Goodrich development. A process that makes it possible to vulcanize soft rubber directly to a metal core, with no "dead" hard rubber base.



Old-Type Roll about to be re-covered. Note "dead" hard rubber base (¼" thick). Note that the soft rubber cushion is worn down to about ¼". If roll had been covered by the Vulcalock process, it would still have about ½" of soft rubber.

Don't pay for Hard Rubber

BUY a Goodrich "Vulcalock" roll and you get soft rubber . . . 100% live cushioning . . . from outer surface to metal core. Buy any other make of roll, and you have to take a "dead" hard rubber base.

In a roll with 1" cover this hard rubber base is about ¼" thick. That means that for every dollar you put in any roll other than a Goodrich "Vulcalock" roll, you get only about seventy-five cents' worth of soft rubber cushion; the remaining twenty-five cents' is wasted on a hard rubber base that has no cushioning value whatsoever.

Bad enough to waste a quarter of the purchase price on "dead" hard rubber; but the loss doesn't end there. When it's time to re-cover a hard rubber base roll, the metal core has to be re-rough-threaded.

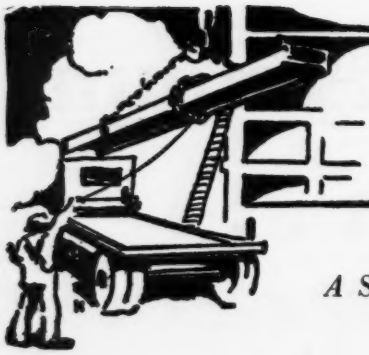
That means a loss of metal. The roll has to be built up to the required outside diameter by a thickening of the rubber. Each time a hard rubber base roll is re-covered, you have to pay for a thicker cover. Frequently the makers of the hard-rubber-base rolls have to tamper with the formula for the soft rubber cover so that cover and hard rubber base can be vulcanized at the same time.

Goodrich "Vulcalock" rolls are the *only* rolls that do not have a hard rubber base.

We should like to send you literature describing "Vulcalock" rolls in greater detail, and shall be pleased to quote prices on specific jobs. Address your inquiries, without obligation, to The B. F. Goodrich Rubber Company, (Est. 1870) Akron, Ohio.

B. F. Goodrich

VULCALOCK PAPER MILL ROLLS



CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Winston-Salem, N. C.—The Hinde & Dauch Paper Company, Sandusky, Ohio, manufacturer of corrugated paper, fibre and other boxes and containers, has approved plans for a new one-story branch plant at Winston-Salem, where site has been selected fronting on line of the Southern Railway. General building contract for initial unit has been awarded to W. N. Reynolds, Winston-Salem. It is estimated to cost over $100,000, with equipment. Work will begin at an early date. The Hinde & Dauch company has concluded negotiations for the purchase of a large tract of land at Hoboken, N. J., consisting of 32 city lots, bounded by Monroe, Madison, Ninth and Tenth streets, and will take possession at once. It is proposed to use the property for a new branch plant, for which plans will be drawn in the near future. The Hoboken plant is reported to cost over $150,000, with equipment.

Harrisburg, Pa.—John Z. Bayless, Baltimore, Md., has purchased the plant of the Harrisburg Paper Box Corporation, 1550 Vernon street, Harrisburg, at a recent receiver's sale, for a consideration of $15,100, subject to a first mortgage of $40,000, held by the Mechanics Trust Company, Harrisburg. The plant has been continued in operation up to the present time by W. J. McClintock, Jr., and John W. Cowden, receivers, giving employment to about 50 workers, and it is understood that the new owner of the property proposes to operate the business under a reorganization plan.

West Carrollton, Ohio—The West Carrollton Parchment Company, West Carrollton, has begun alterations and improvements in its mill, for which general contract recently was awarded to Charles H. Shook, Third National Bank Building, West Carrollton. Estimated cost of program has not been announced. It is understood that the work will also include improvements in machinery and equipment.

Lynchburg, Va.—The Rockford Fibre Container Company, Rockford, Ill., has leased property at Lynchburg for its proposed new branch plant for the manufacture of fiber boxes and containers. It is proposed to begin the installation of machinery at once, some of the equipment to be removed from the Rockford plant to the new location. It is understood that the company will also secure certain machinery, including automatic scoring, slotting and printing equipment from George W. Swift, Jr., Bordentown, N. J. The containers will be made from pure chestnut wood pulp, as previously reported in these columns. The plant is reported to cost close to $40,000, with equipment, and will have a rated output of approximately 100,000 box units per day. J. H. Conway is secretary of company.

Salem, Mass.—The Salem Paper Company, recently organized by Benjamin Ablovich, 74 Federal street, Salem, and associates, with capital of $100,000, is said to be planning early operation of a local paper converting plant. Mr. Ablovich will be treasurer of the new company.

Piermont, N. Y.—The Robert Gair Company, 420 Lexington avenue, New York, manufacturer of corrugated, fiberboard and other boxes and containers, wih main plant at Piermont, is arranging for a recapitalization of the company, consisting of $7,000,000 authorized 6 per cent income notes, of which $2,330,100 will be issued at the present time; 560,00 shares of preferred stock, of which 186,408 shares will be issued; and 1,900,000 shares of common stock, of which 575,000 shares will be issued. A portion of the proceeds will be used in connection with proposed expansion program, including the acquisition of other manufacturing units to round out company operations in the container field.

Chicago, Ill.—The Cardinell Vellum Manufacturing Company, 15 Label street, Montclair, N. J., manufacturer of tracing and vellum papers, etc., is having plans drawn Holabird & Root, 333 North Michigan avenue, Chicago, for a new plant in that city. It will be one and two-story type, reported to cost close to $60,000, with equipment.

Chester, W. Va.—The E. C. Ottis Company, manufacturer of roofing papers, is completing the construction of a new local mill on Pan avenue and will place the unit in service within the next fortnight. It will be given over to the production of prepared roofing papers, replacing a plant of similar character at Toronto, Ohio, destroyed by fire a number of months ago. The new mill will represent an investment of about $60,000, and it is proposed to increase facilities in different departments in the near future for manufacture of tar papers, asphalt paper stocks and allied specialties. The initial mill will give employment to about 35 persons, and will have a capacity rating of about six carloads of finished material daily. It is understood that the company will discontinue operations at Toronto entirely, concentrating all production in the future at Chester. E. C. Ottis is president.

Blue Island, Ill.—The W. W. Koehler Company, 2526 West Oak street, has approved plans for the immediate rebuilding of portion of one-story storage and distributing plant at 2217 Grove street, recently damaged by fire with loss of about $40,000, including equipment. General contract for the reconstruction has been let to W. Mancke, 6769 174th street, Tinley Park, Blue Island.

East Rutherford, N. J.—The Flintkote Company, Maple street, manufacturer of roofing papers, etc., with headquarters in the Park Square Building, Boston, Mass., is completing the construction of a new addition to its East Rutherford plant, consisting of a two-story and basement unit, 36 x 55 feet, and will place in service at an early date. The new structure will provide for increased operations. Karl A. Lefren, Inc., 171 Madison avenue, New York, is engineer for the company.

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PULP STUDY COMPLETED

The United States Tariff Commission reported to the Senate last week that there had been a record importation of pulp wood during the first quarter of this year, but it voiced no opinion whether its study had led it to conclude that a duty should be imposed.

The commission said the connection between the heavy imports and the depreciation of currency in pulp-producing countries was not altogether clear in view of contracts that had been let for European pulp before the currency change.

The report was based upon an investigation instituted on December 18, 1931 pursuant to a Senate resolution, "That the United States Tariff Commission is directed to make a thorough investigation of the effect of the depreciation in value of foreign currencies upon the importation into the United States of mechanically ground wood pulp, chemical wood pulp, unbleached or bleached, and pulpwoods, and to report to the Senate as soon as practicable the results of such investigation."

The commission examined a large body of general statistical data on production, sales, imports, exports, prices, and general development of the pulp industry in the United States and the principal foreign pulp-producing countries. Specific data on the domestic industry were obtained by questionnaire from (1) consumers of pulpwood and producers of pulp, and (2) consumers of pulp as represented by the so-called converting papermills—that is, mills which buy most or all of their pulp in the general market and not from affiliated plants or concerns. The commission sent questionnaires to 165 domestic manufacturers of pulp, the majority of whom produce paper also, and received 145 returns. To the converting paper mills the commission mailed 265 questionnaires and received 201 replies. Data relative to the quantities and prices of imported pulp, and the markets to which distributed, were obtained direct from the books of record of the importers by agents of the commission. The information thus obtained covered approximately 90 per cent of contracts made with domestic paper mills during 1929, 1930, and 1931 for the purchase of imported pulp.

"At all times, past and present," the report in part continues, "the great bulk of the importation of pulp wood and wood pulp into the United States has been from countries whose currency is depreciated. The only country from which significant imports of pulp are received and whose currency has not depreciated, is Germany. The principal sources of our pulp imports from depreciated currency countries are Canada, Sweden, and Finland, and smaller quantities come from Norway. Canada is the only important source of pulp wood imports.

"The depreciation in exchange of all four of the countries just named began in the latter part of September, or in October, 1931, and was connected with the action of the United Kingdom in suspending the gold standard. Data are also given for Germany, the exchange of which during September and October was slightly below par.

"The exchange of each of the four countries under consideration dropped rather sharply in the latter part of September or during October. In each country it was still lower in December. The exchange of Canada, Sweden, and Norway rose slightly in January, but that of Finland fell still lower. Since January the exchange has risen in all four of these countries.

"In each month beginning with November the exchange rates of Sweden, Norway, and Finland have been considerably lower than those of Canada, and beginning with January the rate for Finland has been considerably lower than the rates for Sweden and Norway. These differences should be borne in mind in comparing the imports of wood pulp from the several countries during recent months.

"The effect of exchange depreciation in foreign countries upon their competition in the markets of the United States can of course be judged correctly only on the basis of facts concerning actual imports in comparison with domestic production and concerning actual prices of imported as compared with domestic commodities. It should be pointed out, however, that whatever advantage in competition the foreign country may gain must depend not merely on the exchange rate but on the relation between that rate and costs of production in terms of the country's own currency. If the costs of production should rise as rapidly as the exchange rate fell, there would be no advantage in competition. The commission has not undertaken to ascertain the actual costs of production of wood pulp in foreign countries during the period since depreciation set in, nor has it obtained evidence as to changes in rates of wages or other elements in costs in those countries during that period. But some light on tendencies as regards costs of production may be drawn from wholesale price indexes. When depreciation sets in a given country, the prices of products which that country imports from gold standard countries tend to rise in terms of its currency, and this in turn exercises some influence on prices of domestic commodities and on the cost of living.

"The discontinuance of the gold standard was followed by an increase of prices in Sweden, Norway, and Finland. This was to be expected because of the relatively important part that foreign trade plays in the economy of these countries and because of the importance of their foreign trade with countries maintaining a gold standard."

The report is voluminous, and contains many statistical tables and diagrams. It will be printed later.

TAPPI Notes

Chester G. Landes, chemist for the Harriman Company at Harriman, Tenn., has been transferred to the Mead Corporation at Chillicothe, Ohio.

Gosta Hall, technical advisor of the Swedish Pulp Company, Stockholm, Sweden, is visiting American paper mills.

J. P. Hagenauer of H. C. Eastman Inc., has been transferred from Chicago to Wilmington.

V. F. Waters has resigned his position as mechanical engineer for the Maxson Automatic Machinery Company, Westerly, R. I. Mr. Waters may be reached at P. O. Box 50, Norwood Station, Cincinnati, Ohio.

E. C. Gildenzopf, formerly superintendent of the Asbestos, Md., plant, of the Congoleum-Nairn Company is now superintendent of the Schmidt and Ault Paper Company Mill at York, Pa.

Francis Crowley, formerly chemist of the American Writing Paper Company is not with Fraser Companies Ltd., Edmundston, N. B.

A. W. Peach has been transferred from the Camden, Arkansas mill of the Southern Kraft Corporation to the Panama City, Florida, mill.

The Spring Meeting of the Pacific Coast Section of TAPPI, will take place in Portland, Ore., May 6 and 7. Ray Smythe 301 Park Building, Portland, has been appointed general chairman.

Brotherhood Holds Wage Conferences

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., April 25, 1932.—Officials of the International Brotherhood of Papermakers are now busily engaged in holding conferences with large paper mill concerns relative to new wage and working agreements. A meeting was held this week at Boston with representatives of the Great Northern chain of mills and other conferences are scheduled with the St. Croix Paper Company, Woodland, Me., and the Cushnoc Paper Company, Augusta, Me. From there the union officials plan to proceed to Northern New York for interviews with representatives of the St. Regis Paper Co. Meetings with manufacturers in the Glens Falls area are also scheduled for the near future although no definite date has been fixed. The majority of the existing agreements expire early in May.

High Water Handicaps Mills

[FROM OUR REGULAR CORRESPONDENT]

BROWNVILLE, N. Y., April 25, 1932.—High water is interfering with operation of paper mills in this section and a number were forced to curtail operations for several hours during the past week. Both the Brownville Board Company and the Dexter Sulphite Pulp and Paper Company suspended operations early in the week for some time and the rising waters also slowed up the operation of the mills of the Sherman Paper Company at Felts Mills. Virtually all mills along the Black River reported that operations were being impeded because of similar conditions.

New TAPPI Members

The Technical Association of the Pulp and Paper Industry announces the following elections to membership:

Edward H. Bucy, vice president and director of research of the Brevolite Lacquer Company, North Chicago, Ill.

Richard G. Coker, engineer for the Carolina Fiber Company, Hartsville, S. C. is a graduate electrical engineer of the University of North Carolina and Cornell. He was formerly cost engineer for the Sonoco Products Company of Hartsville, S. C.

Otto P. Goeppinger, engineer for the Waterbury Tool Company, Waterbury, Conn., has been transferred from associate to active membership.

Harry M. Gray, superintendent of technical control, Cherry River Paper Company, Richwood, W. Va., was formerly chemist at the York Haven Paper Company, York Haven, Pa.

Michael M. Klosson, chief engineer of Buffalo Pumps, Inc., Buffalo, N. Y. studied at the University of Michigan and Buffalo University. He was formerly inspector of engineering materials in the Bureau of Engineering of the U. S. Navy Department.

Frank R. Makara is a graduate student at the University of Idaho and a graduate of the New York State College of Forestry. Mr. Makara worked for several months at the Scott Paper Company, Chester, Pa.

Albert S. Quinn is Pacific Coast representative of the Stebbins Engineering and Manufacturing Company at Seattle, Wash. He graduated from Cornell as a civil engineer in 1929 and has since been with the Stebbins organization.

J. Stuart Sneddon, general sales manager of the George and Sherrard Paper Company, 220 E. 42nd Street, New York, is a 1910 graduate of the Massachusetts Institute of Technology. Mr. Sneddon has been connected with Thomson Starrett Company, construction engineers, the Aetna Explosives Compnay, and the Babcock and Wilcox Company, all of New York City.

To Answer Paper Problems

More than five hundred paper making experts will participate in a general question box discussion at the Thirteenth Annual Convention of the American Pulp and Paper Mill Superintendents Association. This meeting will be held June 2, 3 and 4 at the Hotel Statler in Buffalo.

The question box will be conducted by National President Roy H. Kelly, who is general superintendent of the Marathon Paper Mills Company, Rothschild, Wis. Questions pertaining to all phases of pulp and paper mill practice will be presented and thoroughly discussed by men who have had personal experience with the problem involved in any given question. This session is expected to be productive of a general exchange of valuable ideas and practical information. It is the belief of General Chairman Fred J. Rooney, mill manager of the Upson Company, Lockport, N. Y., who is general chairman of the convention, that this discussion will enable many of the visiting superintendents to arrive at the solution of problems which have been troubling them in the operation of their respective pulp and paper mills.

Mr. Rooney has requested the members of the American Pulp and Paper Mill Superintendents Association to send to him in writing an outline of whatever problems are bothering them, so that these problems may be presented in orderly fashion during the question box discussion at the Convention.

Such questions should be addressed to Mr. Fred J. Rooney, Box 357, Lockport, N. Y.

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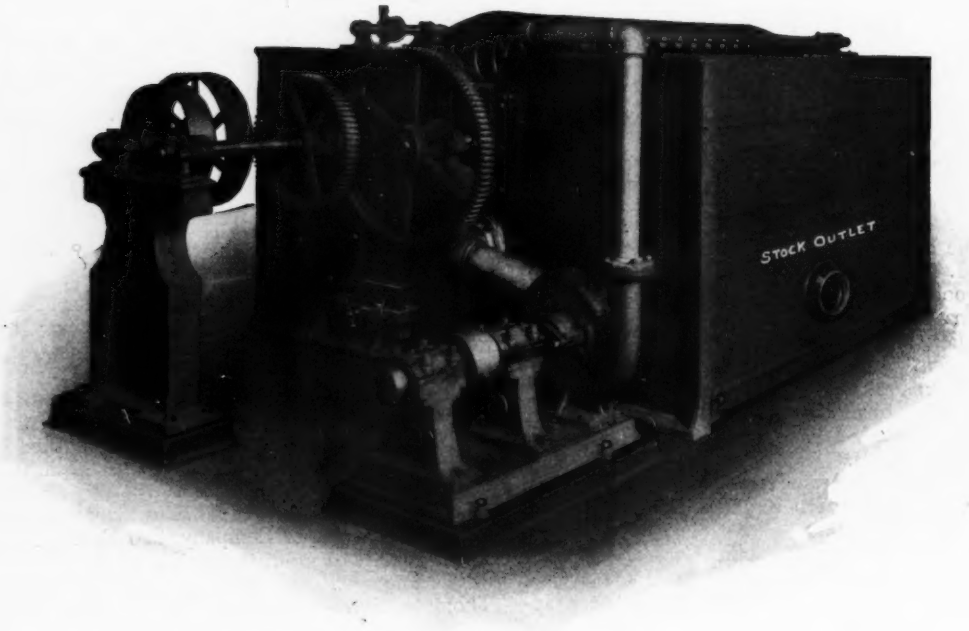

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

The National Research Council, 21st and B Street, Washington, D. C., through Dr. Clarence J. West, extends the courtesy of its photostat service to members of the Technical Association of the Pulp and Paper Industry. Owing to a limitation of personnel and time, this service cannot be extended to non-members.

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Bleaching

Electrolysis of Sodium Chloride. Rudolf Tausig. Zellstoff u. Papier, 11, No. 12:692-694 (Dec. 1931).—The author experiments with the various methods of preparing bleach liquor by electrolysis of salt. Much detailed description is presented of the pressure cell of Carl Kellner.—J. F. O.

Process for the Bleaching of Plant Fibrous Materials, Especially Wood Pulp. I. G. Farbenindustrie, A. G. Frankfurt a. M. Aust. pat. 123,400 (Feb. 15, 1931). The fibrous material is treated in the counter current principle with bleach liquors with a gradient increasing concentration of active chlorine.—J. F. O.

Process and Arrangement for the Bleaching of Pulp Fibers. Firma Maskin och Brobyggnads A. Bol. Helsingfors Fin. pat. 13,369 (Oct. 31, 1928).—A system of multiple bleaching.—J.F.O.

Process for the Preparation of Bleach Liquor from Alkaline Residual Liquors. Zellstofffabrik Waldhof, Mannheim. Swed. pat. 72,194 (July 1, 1929).—The waste liquors from the mercerization process, that is the liquors used in the treatment of pulps or products made therefrom, are chlorinated and the organic products precipitated thereby are separated by filtration.—J. F. O.

Process and Device for the Bleaching of pulp. J. E. Heiskaned, Lievestuore. Fin. pat. 13,284 (April 10, 1929). Addition to Fin. pat. 8,691.—The bleaching process is completed in a container which is under pressure, through which the pulp passes continuously.—J. F. O.

Bleaching of Pulp for Viscose Rayon. Yosio Mituzawa. Japan pat. 91, 185 (Apr. 24, 1931); C. A. 26:1441.—Sulphite pulp is partially bleached by treating it with about 0.2 per cent caustic alkalies and alkali hypochlorites or bleaching powder solution (60-80 per cent of the necessary amount for bleaching). Then it is once more treated with 0.2 per cent caustic alkalies without heating under ordinary pressure and with the remaining bleaching solution.—C. J. W.

Mechanical Process

New Development in Groundwood Production. C. D. DeMers. Paper Mill 55, No. 7:18-20 (Feb. 13, 1932); Paper Trade J. 94, No. 8:18-22 (Feb. 25, 1932); Paper Ind. 13:1439, 1449, 1451 (March, 1932).—A discussion of the advantages of the Tycos Temperature Recording Regulator for grinders. The essential and distinctive features of the installation lie in proper thermometer-bulb design and location in the grinder pit.—A. P.-C.

Twin-Grinder. K. Klimpke. Pulp Paper Mag. Can. 32:246-247, 263 (Feb. 25, 1932).—The twin-grinder, which is characterized by the combination of the pockets in pairs so that no gap exists between the grinding surfaces of the two pockets of each pair, is described, and its merits are brought out.—A. P.-C.

New Artificial Pulp Stone Marks Progress of Industry. A L. Ball. Pulp Paper Mag. Can. 32: 176-177, 204 (Feb. 11, 1932).—A description of the design, construction and characteristics of "Aloxite" artificial pulp stones, with a discussion of their merits and performance.—A. P.-C.

Abitibi Grinder Room Employs Both Motors and Water Wheels. A. T. Huretr. Pulp Paper Mag. Can. 32:60-61 (Jan. 21, 1932).—The grinder room at Iroquois Falls contains water-wheel driven, motor driven and combination driven grinder lines. The latter results in very great flexibility, rendered important to avoid waste of water owing to the particular power-generating and water-utilization conditions of this mill.—A. P.-C.

Automatic Grinder Control. Konrad Rupprecht assignor to General Electric Co. U. S. pat. 1,828,622 (Oct. 20, 1931).—In the case of two or more continuous grinders driven by a common motor, the invention provides a regulator that, on the failure of one grinder or of its feed mechanism, automatically causes the magazine to be raised above the stone and at the same time maintains the pressure on the other grinder (or grinders) unchanged. When restarting the grinder, the magazine cannot be lowered until the stone has been started, and the feed cannot be started until the magazine has been lowered. —A. P.-C.

Wood Grinder. J. M. Voith Machinenfabrik, Heidenheim. Ger. pat. 529,445 (Jan. 31, 1930).—The purpose of the invention is to prevent the wood from rolling while it is being fed through the usual magazine to the stone.—J. F. O.

Wood Grinder with Automatic Regulator. Magnetwerk G. m.b.H. Eisenach. Ger. pat. 522,842 (March 2, 1929).—The wood grinder is regulated by the characteristics of the stock therefrom which set in motion electrical and mechanical devices.—J. F. O.

Device for the Control of the Operation of a Pulp Grinder with the Continuous Mechanical Feeding of the Wood. Allgemeine Elektricitats-Gesellschaft, Berlin. Aust. pat. 124,580 (May 15, 1931).—The speed of the feed mechanism is continuously recorded by a registering instrument which shows at determined intervals the total motion of the feed mechanism.—J. F. O.

Process and Device for the Grinding of Wood, Fragments of Wood, Fibrous Stalks and Similar Substances. Emil Gminder, Reutlingen. Ger. pat. 523,560 (Jan. 13, 1929).—The apparatus consists of an ordinary pulp stone with a screw press on each side for feeding the material to be ground. The pressure exerted on the screw press is dependent upon the power used by the pulp stone.—J. F. O.

Device for the Feed of Half Dried Wood Pulp, Ground Wood and Similar Materials, which are Conveyed by Means of Blower Systems. Alois Danninger and Alfred Schuppler. Aust. pat. 123,233 (June 16, 1929).—J. F. O.

Mercerization of Ground Wood. S. Schmidt Nielsen, V. Haffner and P. Stensen. Kgl Norske Videnskab. Forh. 3, no. 22:86-88 (1930); C. A. 26:840.—Attempts were made to improve the quality of mechanical pulp by treatment with dilute alkali (20 grams sodium hydroxide per liter), which causes a slight swelling of the fibers but dissolves practically nothing. Unsized paper was then made by shredding a long-fibered stock and the tensile strength determined. The breaking length for the untreated material was 5000 meters for a mass of 100 grams 1 square meter and 6600 for the treated material. The "mercerized" pulp holds talc better; it tends to be slightly yellow but does not give an improved paper when mixed with sulphite pulp.—C. J. W.

Raw Materials

Production of Paper From Oak Waste. M. Rech and N. Orlov. Bumazhnaya Prom. (Paper Ind.) 9, No. 8-9:57-68 (Aug.-Sept. 1930); Chimie & Industrie 26:1183-1154 (Nov., 1931).—Cooking with alkali (soda, sulphate), bisulphate, water, sodium carbonate, lime and nitric acid did not yield pulp satisfactory for paper making.—A. P.-C.

Utilization of Ook Waste for the Manufacture of Paper. Y. Khinchin, N. Rosenberger and P. Larine. Bumazhnaya Prom. (Paper Ind.) 9, No. 8-9:68-85 (Aug.-Sept. 1930); Chimie & Industrie 26:1153 (Nov., 1931).—Numerous tests carried out on the residues from the extraction of tannin showed the possibility of producing material suitable for paper making. Laboratory cooks using 28 to 30% alkali and a pressure of 7 to 9 atmospheres gave a pulp that was easily bleached with 5 to 6.5% of available chlorine. The fibers are easily attacked by chlorine and bleaching should be carried out carefully. The paper obtained from this pulp had satisfactory physical properties. Commercial tests on the production of monosulphite pulp gave satisfactory technical results but the process cannot be applied commercially as the problem of liquor recovery has not yet been solved. Laboratory tests showed that the sulphite process does not give as strong a pulp as the alkaline process, but the pulp can be bleached with 3.5 to 5% of available chlorine.—A. P.-C.

Process for De-Inking Waste Paper. Kellogg-Dils, Inc. Belg. pat. 380,172 (June 30, 1931).—Waste papers are reduced to small pieces and beaten at atmospheric pressure in a hot solution containing caustic soda, sodium borate, bisodium phosphate and potassium carbonate.—A. P.-C.

Sorption and Natural Penetration of Electrolytes into Wood. R. Richardson. Pulp Paper Mag. Can. 32:160-162 (Feb. 11, 1932).—A preliminary paper reporting results obtained to date in the course of an unfinished investigation intended to ultimately cover the following factors in connection with diffusion. (1) relation between forced and natural penetration; (2) effect of concentration of the electrolyte; (3) effect of the shape of the chip. (4) specific effect of the electrolyte (inclusive of numerical diffusion calculations; (5) effect of non-electrolytes; (6) temperature factor; (7) specific effect of wood species; (8) complex phases; (9) relation between rates of penetration and sorption.—A. P.-C.

Forced Penetration of Liquids into Wood and its Relation to Structure Temperature and Pressure. J. W. Sutherland. Pulp Paper Mag. Can. 32:163-167 (Feb. 11, 1932).—A preliminary paper outlining work done and results obtained during the past 18 months on the forced entry of liquid into the fiber cavity of wood.—A. P.-C.

Effect of Chemical Treatment on Wood Permeability. Alfred J. Stamm. Ind. Eng. Chem. 24:51-54 (Jan. 1, 1932).—Treatment with chlorine gas and treatment with chlorine gas followed by a treatment with ammonia open the fine capillary structure of wood enough to increase its permeability to water. Using a drastic treatment a permeability increase of 130-fold was obtained with a thin section, but under such treatment the strength of the wood was almost totally destroyed. Milder treatment caused a smaller increase in permeability without greatly affecting the strength.—A. P.-C.

New Method for Production of Paper from Deciduous Wood. I. Kovalevskii and V. Khatzkov. Bum. Prom. 10, no. 9:35-40 (1931); C. A. 26:841.—Aspen waste obtained in the production of matches is converted into pulp by a combined chemical and mechanical treatment in the cold. On a factory scale the method gave a suitable grade of printing paper at a considerable saving in electric power and steam. The laboratory experiments with abietic wood were not equally successful, while those with birch and alder produced a paper similar in mechanical properties to that obtained from aspen but of darker color.—C. J. W.

Paper from Stalks and Leaves of Corn. N. Maksimov. Bum. Prom. 10, no. 10:25-28 (1931); C. A. 26:841.—A satisfactory yield of light brown wrapping paper of good grade was obtained from corn stalks and leaves by cooking them with lime.—C. J. W.

Cellulose

Studies on Reactions Relating to Carbohydrates and Polysaccharides. XXXIX. Structure of the Cellulose Synthesized by the Action of Acetobacter Xylinus on Glucose. Harold Hibbert and Jacob Barsha. Can J. Research 5:580-591 (Nov., 1931).—A study of the chemical properties of the cellulose obtained from glucose by direct bacterial synthesis, by the action of acetobacter xylinus, showed that it is identical with natural cellulose.—A. P.-C.

Mechanism of Plant Synthesis. .J. Barsha. Pulp Paper Mag. Can 32:170-171 (Feb. 11, 1932).—A detailed study of the chemical properties of the "cellulose" obtained by inoculating, with acetobacter xylinus, a 5 per cent solution of glucose containing 0.5 per cent monopotassium phosphate, 0.1 per cent sodium chloride, 0.1 per cent asparagine and 0.5 per cent ethyl alcohol showed that it was identical with cotton and wood cellulose. This work constitutes the first experimental demonstration of the polymerization of glucose to cellulose and is strong evidence that cellulose is a true chemical individual, and not merely a general class of substances.—A. P.-C.

Swelling of Pine Cellulose by Electrolytes and Organic Compounds in Aqueous Solutions. Carl G. Schwalbe and Ottman Fischer. Kolloidz 57:338-343 (1931); C. A. 26:1116.—The swelling of Brown Company Super Alpha fiber was determined in one per cent solutions of mineral and organic acids, acid salts, chlorides and sulphates of potassium, sodium magnesium and calcium, bases, salts of weak acids, alcohols, aldehydes, and carbohydrates. The time of swelling was studied up to 8 hours. Swelling is a function of hydrogen ion concentration. Acids lower swelling and bases increases swelling as compared with

water. Carbohydrates and amino acids show a specific effect in raising the swelling.—C. J. W.

Refining Wood Pulp. I. Naiman. Bum. Prom. 10, no. 10:12-17 (1931); C. A. 26:840.—Naiman discusses the existing methods for refining wood cellulose intended as a substitute for cotton linters in the production of celluloid, photographic films, etc.—C. J. W.

Alkaline Processes

Properties of Kraft Pulp Made from Spruce Wood and from Pine Wood. Erik Haaglund and C. Nyman. Zellstoff u. Papier 11, No. 12:687-88 (Dec., 1931).—The authors tested the kraft pulps made from spruce wood and pine wood. Wood of about the same age, and diameter was used, each kind being tested for rosin and ash. The cooking acid was also of approximately the same composition. The pulp obtained from each kind of wood was tested for lignin and pentosane content. The methods of the tests are given in detail and tables are added showing the results. The tearing length of kraft pulp produced from spruce wood is 20 per cent greater and the double folds are almost 60 per cent greater than with the use of pine wood.—J. F. O.

Production of Paper from Cornstalks. O. R. Sweeney and Lionel K. Arnold. Iowa Eng. Expt. Sta., Bull. 100, 78 p. (Sept. 10, 1930).—A digest of previous experiments with cornstalks is given, showing why commercially feasible processes did not result. In the experiments reported, the soda and sulphate processes were most effective, a combination of water digestion and cooking with caustic soda in a second stage giving especially good results. From 15 to 25 per cent caustic soda was required in reducing cornstalks, with the optimum around 20 per cent. The yields of pulp ranged from 40 to 50 per cent, bleaching with as little as 11 per cent bleaching powder. A strong sulphate pulp was made from whole stalks by digesting with 21 per cent chemical, and tested lower in bursting strength but higher in tensile strength than a wood sulphate pulp made for purposes of comparison. The sulphite process was unsatisfactory. With a lime cook yields of 60 per cent of pulp suitable for egg-case filler and similar uses were obtained. A preliminary fermentation of the stalks reduced the alkali consumption, but yield and strength data presented are inconclusive. A bibliography of 117 references is included.—A. P.-C.

Treatment of Fibers for the Manufacture of Paper. Kellogg-Dils, Inc. Belg. pat. 379,996 (June 30, 1931).—Ligneous material is subjected to the action of a solution containing 50 per cent water, 39 per cent sodium borate, 10 per cent caustic soda and 1 per cent trisodium phosphate.—A. P.-C.

Treatment of Ligneous Materials for the Production of Fibers. Kellogg-Dils, Inc. Belg. pat. 379,997 (June 30, 1931).—Ligneous materials are treated with a solution containing about 50 per cent caustic soda by weight, and preferably also small percentages of sodium thiosulphate, sodium borate and trisodium phosphate.—A. P.-C.

Use of Concentrated Alkali in Pulping. W. E. Adlington and J. H. Ross. Pulp Paper Mag. Can. 32: 248-251, 270 (Feb. 25, 1932).—By cooking for about one and one-half hours at 150 deg. C. with 40 per cent caustic soda solution, yields of about 49 per cent of screened, light-colored, easy-bleaching pulp can be obtained, having valuable commercial properties. The use of such highly concentrated liquors would lend itself to the development of a continuous pulping process.—A. P.-C.

Process for the Chemical Treatment of Wood. I. G. Farbenindustrie A. G., Frankfurt a.M. Ger. pat. 528,359 (Aug. 31, 1928).—The wood is treated warm in the presence of alkali with alkylation, aralkylation or arylation means. For example, 100 parts by weight of spruce wood meal is mixed with 4 parts by weights of a 50 per cent solution of caustic soda and heated with 3 parts by weight of ethyl chloride for 6 hours at 100 deg. The seemingly unchanged reaction mixture is freed from the excess of ethyl chloride, washed with water till it is free from salts and dried. Yield is 125 per cent. The product forms a viscose solution in 70 per cent alcohol benzol and acetone, which gives a very elastic film and thread.—J. F. O.

Process for the Treatment of Plants or Wood Species which Contains Rosin for the Production of Pure Rosin or other Products Containing Rosin and Pulp. Daniel Gardner, France. Fin. pat. 13,635 (March 12, 1928).—The steamed, dried and finely pulverized starting product is treated in the presence of a reducing material at low temperatures (about 80° C.) with an alkaline solution of 2 to 2.5° Be. (calculated as NaOH) and the rosin is then precipitated out with acid in the usual manner, refined with a suitable solvent and the residue is eventually worked up to pulp. An alkaline solution of a strength of 7 to 8° Be. NaOH is used for the pulp treatment, which takes place in an enclosed container under pressure and heat.—J. F. O.

Process for the Preparation of a Cooking Liquor for the Manufacture of Pulp. Patentaktiebolaget Grondal, Stockholm, Sweden. Ger. pat. 529,099 (March 25, 1930).—The liquor is prepared from the smelt obtained from the combustion of the waste liquors from the pulp manufacture containing alkali salts. The solid smelt is roasted at temperatures between 240 and 500° to decompose the sulphides and thiosulphates contained therein. It is then dissolved in water and converted into alkali bisulphite or hydroxide in the usual manner. According to claim number 2, the smelt is broken up and stored for a while before the roasting, in order to assist in the oxydation and in the roasting process.—J. F. O.

Process for the Manufacture of a highly purified, Pentosane-free Wood Pulp. I. G. Farbenindustrie A. G., Frankfurt a.M. Aust. pat. 123,873 (March 15, 1931).—An exceedingly pure wood pulp, free from pentosanes and lignin and almost completely free from resin, is obtained if the pulp obtained in the usual manner is digested with a 5 per cent solution of sodium hydroxide for three hours at room temperatures, then pressed or centrifuged until it is freed from the mother liquor to the extent that about 15 per cent of the sodium hydroxide, calculated on the pulp, still remains in the stock. The pulp still containing this amount of sodium hydroxide is diluted by the addition of water or steam condensate and then given an after-cooking. It is then washed, bleached and further treated in the usual manner.—J. F. O.

Black Liquors

Arrangement for a Soda Oven. G. A. N. Hansen, Krylbo. Swed. pat. 72,409 (July 3, 1926).—The oven is provided with a soda smelt trough which is lined with soap stone.—J. F. O.

Process for the Operation of a Soda Smelting Oven, as Well as a Device for Such. H. N. Unden, Spransviken. Swed. pat. 72,229 (Oct. 22, 1929).—The air blown into the form of the oven has a pressure of at least 200 m.m. water and is forced to the under wider part through a great number of sidewards and obliquely up and down directed relatively narrow outlets, at the most 300 square millimeters.—J. F. O.

Arrangement for Multiple Effect Evaporators and the Method of Operation. C. Rosenbald, Stockholm. Swed. pat. 71,712 (Dec. 5, 1928).—The condensate discharge of the heat bodies of two or more evaporator units are connected directly to a common discharge. Throttling means are used for the gradient decrease in pressure.—J. F. O.

Process for the Manufacture of Oils, Alcohols and Other Products. A. R. Lindblad, Stockholm. Swed, pat. 71,716 (Feb. 20, 1929).—The alkaline waste liquors from straw, wood and peat cooking are reduced or hydrated and the products thus obtained or a part of the same or dry distilled.—J. F. O.

Operation of Continuous Caustic Recovery Plants. W. E. Piper. Paper Trade J. 94, No. 7: 138-139 (Feb. 18, 1932).—

Brief observations from practical experience in the design, construction and operation of continuous slaking, causticizing and clarification equipment in pulp-mill liquor-recovery plants.—A. P.-C.

Steam Savings by Forced Circulation Evaporation. W. T. Hinckley. Paper Trade J. 94, No. 4:44-46 (Jan. 28, 1932).—A discussion of the steam savings effected by the application of forced circulation to the evaporation of black liquor.—A. P.-C.

Emulsifier, Especially for the Preparation of Emulsions Containing Bitumen for Road Surfacing. E. A. V. Bjorn, Copenhagen. Swed. pat. 72,188 (Oct. 21, 1929).—It consists of hydrolated and polymerized rosin acids, which are prepared, for example, from the by-product called "floating rosin" obtained from the alkaline decomposition of wood, and in part from materials which have strong moistening properties, such as sulphonated rosin acid.—J. F. O.

Sulphite Process

Pyrites in Canada. Horace Freeman. Pulp Paper Mag. Can. 32:167-170 (Feb. 11, 1932).—Pyrites, in the form of flotation concentrate containing at least 50 per cent sulphur, is burned in a flash roaster comprising a feed hopper, a ball mill in which the concentrate is brought into suspension in air, a fan and a pipe line to inject the mixture of air and pyrites into a specially designed combustion chamber where a temperature of 1150°C. is developed. The gases are rapidly cooled to about 250°C. in a water-tube steam boiler, and finally cooled to atmospheric temperature and washed free from impurities and dust in a tower packed with acidproof tiles. The performance of the installation is discussed.—A. P.-C.

Process and Apparatus for Reconditioning Sulphite Cooking Acid. Thomas L. Dunbar. U. S. pat. 1,832,367 (Nov. 17, 1931).—The digester relief is passed through a separator to separate the liquid and gaseous fractions. The liquid fraction is passed through a heat exchanger where it heats up cold acid being fed into an acid accumulator, and the gaseous fraction is introduced into the bottom of the accumulator where it is absorbed under pressure by the already partly heated acid.—A. P.-C.

Effect of Relatively High Sulphur Dioxide Concentration in Sulphite Pulping. G. H. Chidester and J. N. McGovern. Paper Trade J. 94, No. 5:40-42 (Feb. 4, 1932).—There appears to be a distinct increase in pulping action with increase in initial sulphur dioxide content under normal cooking pressures, but the difference is relatively small, and the results obtained with more than 5.5 per cent excess sulphur dioxide are even less commensurate with the increase in acid concentration than those below that value.—A.P.-C.

Comparative Pulping Value of Russian and Canadian Spruce by the Sulphite Process. W. H. Monsson and G. H. Chidester. Paper Trade J. 94, No. 6.30-33 (Feb. 11, 1932).—Sulphite pulping tests on two lots of Canadian and one lot of Russian spruce indicated no significant difference in the quality or in the yield (calculated on the basis of the weight of the wood used) of pulp produced from each lot.—A. P.-C.

Penetration of Spruce Wood in Sulphite Cooking. W. Jakimanskij. Zellstoff u. Papier 11, No. 12:689-90 (Dec., 1931).—The experiments showed, that chips of spruce wood penetrated the quickest and most thorough with cooking acids rich in magnesia, and that the penetration of the chips depended upon the density of the wood, that is, the wider the annual rings the better the penetration. The rosin content effects the penetration. The bases exerts an appreciable effect upon the penetration.—J. F. O.

Process for Changing Sulphite Waste Liquors into Sodium Compounds. Oskari Routala, Helsingfors. Fin. pat. 13,587 (Aug. 31, 1929).—Sulphite waste liquor partially or completely freed from calcium oxide by means of sodium sulphate, is filtered or centrifuged and after evaporation and combustion in a reducing atmosphere, as well as causticizing, is used in sulphate cooking.—J. F. O.

Process for the Regeneration of the Waste Liquor from the Cooking of Pulp with Alkali Bisulphite. Patentaktiebolaget Grondal, Stockholm, Sweden. Ger. pat. 527,128 (Feb. 15, 1929).—The waste liquor is melted with calcium carbonate, and by lixiviation with water the smelt is separated into a solution of alkali carbonate and a residue of calcium sulphide. The waste liquor is evaporated to dryness before the addition of calcium carbonate.—J. F. O.

Dissolved Oxygen in Presence of Organic Matter. Hypochlorites, and Sulphite Wastes. Emery J. Theriault and Paul D. McNamee. Ind. Eng. Chem., Anal. Ed. 4:59-64 (Jan. 15, 1932).—A simple technic has been developed for the determination of dissolved oxygen by the Winkler method in the presence of large amounts of organic matter. A new modification of Winkler's procedure is proposed for the determination of dissolved oxygen in the presence of sulphite waste.—A. P.-C.

Miscellaneous Pulping Processes

Process and Apparatus for Disintegration of Fibrous Material. William H. Mason assignor to Masonite Corp. U. S. pat. 1,824,221 (Sept. 22, 1931).—The patent covers improvements to Mason's U. S. pat. 1,578,609 (March 30, 1926), for disintegration of wood by the so-called "explosive" process, and provides more particularly special valve mechanism for controlling the discharge of material and fluid from the pressure chamber, and hydraulic means for controlling this valve mechanism and also for controlling the admission of steam to the pressure chamber.—A. P.-C.

Production of Pulp from Ligneous Material. National Fiber Corp. Belg. pat. 379,545 (June 30, 1931).—The wood is digested at a high temperature with a suitable reagent to partially attack the incrusting matter and open up the wood. The softened wood is then subjected to mechanical pressure and at the same time is digested with a suitable reagent to remove a further quantity of incrustant and liberate the fiber.—A. P.-C.

Process and Arrangement for the Preparation of Paper Stock. G. A. Mourlaque, Paris. Swed. pat. 72,626 (Sept. 6, 1927).—Finely divided plant fibrous materials are first softened in water, subjected to a treatment with ozonized air and then cooked with liquor in a digester which is heated by a fire box. The ashes obtained from the combustion of the wood together with burnt calcium carbonate are used in the preparation of the causticizing liquor.—J. F. O.

Process for the Production of Pulp. Samuel Milne, Edinburgh. Fin. pat. 13,585 (May 23, 1927).—A decrease in the required chemicals and a complete removal of the non-cellulose constituents as well as a hastening of the reaction is attained, if the mixture of stock and liquor is simultaneously subjected to a continuous or interrupted action of high frequency electric vibrations.—J. F. O.

Process for the Preparation of Pulp by the Introduction of Gaseous Reagents into the Digester at Several Places. Metallgesellschaft A.G. Frankfurt a.M. Ger. pat. 525,531 (Dec. 25, 1929).—Gas of various strength is introduced at different places in the digester.—J. F. O.

Process for the Preparation of Raw Stock for Paper Manufacture from Corded Cotton Waste with Rubber Impurities. Hans Wrede, Berlin. Ger. pat. 529,176 (March 16, 1930).—After the fibrous material is treated in a ball or rod mill it is washed with a large quantity of water under violent agitation, as in a sedimentation process. The material may be subjected to a treatment with chlorine before or after the mechanical treatment. A liquid prepared from sodium carbonate and chlorine which contains the entire chlorine in the form of free hypochlorous acid, serves for the chlorine treatment.—J. F. O.

Non-Fibrous Raw Materials for Paper Making*

Developments During 1931 of Technical and Economic Natures in the Field of Non-Fibrous Raw Materials Related to Paper Making

By Arthur C. Dreshfield[1]

Introduction

The non-fibrous raw materials committee presents herewith its annual report in the form of a summary of articles by individual members of the committee concerning the commodities with which they are familiar because of their continued contact with them in their line of business.

The 1931 report will probably differ from any future reports in that the major point of interest in practically every commodity covered in the scope of the committee's work has undergone economic changes. With literally hundreds of articles published on the economic situation existing during the year 1931, there is little need to repeat here the facts surrounding and causing these economic changes. The general trend in all commodities has been toward the lowering of prices. In order to effect this reduction and still maintain a stable financial position, manufacturing companies have been forced to expend most of their energies toward reductions in manufacturing, converting, and distribution costs. These reductions in costs, along with a share of what previously was profits, have been passed on to the consumer in the form of reduced commodity costs. This has not been done entirely on the basis of philanthropy, but was an economic necessity in order to insure preservation.

As is usually expected in times of economic stresses, business organizations have divided in their opinions of what should be done from a technical viewpoint. Some have felt that a retrenchment of technical and research activities was necessary while others felt that efforts along such lines were basically necessary in the hopes that new products, improved products, or more efficient methods of production would be found. Such technical work however, is seldom productive in limited time periods, especially under stress, and the net result has been that there are few advancements of a technical nature to report, although there are many such advancements in the making, the results of which efforts will be felt at sometime in the future.

Chlorine and Bleach

By R. T. Baldwin †

Since the last report on this subject to TAPPI The Chlorine Institute, Inc. membership has subscribed to a code, "The Chlorine Institute Code of Practices Governing the Handling of Liquified Chlorine Gas Containers of Multiple Unit Tank Cars, Class I. C. C. 106A500." The code speaks for itself and is as follows:

(A) Multiple unit cars shall not be offered for transportation unless the filled or empty containers thereon are securely attached to the car by means of the equipment on the car provided for this purpose. Containers shall be uniformly placed so that the valve ends are on the same side of the car.

(B) Such cars shall only be consigned to, and spotted on, privately owned sidings, and delivered to one consignee only, provided that when no privately owned siding is available to the consignee, cars may be consigned to one consignee for delivery from a railroad owned siding where adequate mechanical facilities for loading and unloading exist, provided conditions have been approved by the Bureau of Explosives prior to shipment.

(C) When delivery is taken from a railroad owned siding as provided for in (B), the unloading of the filled containers and the reloading of the empty containers, shall be done by the consignee exclusively, as a continuous operation performed during daylight hours only, and the containers shall not be allowed to remain on railroad property, but shall be transported directly and immediately to consignee's premises.

(D) Unloading by any other means than hoisting is prohibited. When other approved standard mechanical devices for attaching the container to the hoist are not available, the only permitted attaching device to be used shall consist of a straight bolted pair of channel irons with two wrought swiveled hooks, one to each end, engaging the full depth of the chime, and with wrought center eye bolt, and chain or hook for eye bolt, and standard specifications for same shall be furnished each consignee by the consignor.

(E) Containers shall be lifted only high enough to clear the hand rails.

(F) Consignees taking delivery shall provide at least one gas mask of approved design, and at least two men of the consignee's unloading crew shall be instructed in its use, and also instructed how to handle a gas leak. Water under pressure should be available to hydrate leakage.

(G) Containers transported on vehicles provided by the consignee shall not be loaded in tiers and each container shall be chocked separately to prevent rolling, and all shall be secured either by tailboard or suitable chain or rope to the body of the vehicle.

(H) A derailer suitably located shall at all times protect the car while unloading, and if the track be provided with switch openings at both ends, there shall be a derailer at each end of the car.

(I) Nothing contained herein affects I. C. C. Regulations effective October 1, 1930, or amendments thereto.

Practically every pulp or paper mill that buys liquid chlorine buys lime in some form, and passes chlorine, in many cases, into this lime to make up bleaching materials. It is of interest therefore to note a new car designed to handle lime with the ease usual in handling liquids. This new car (Fig. 1) is offered by the General American Tank Car Corp. of 122 East 42nd St., New York either for purchase or lease.

This car, while not officially classified as a tank car, very closely resembles one. For the same reason that a tank car for

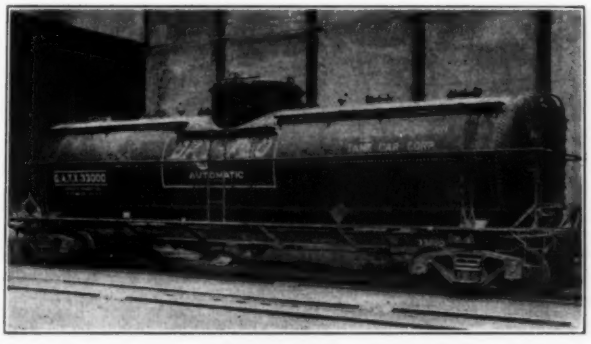

FIG. 1

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., Feb. 15-18, 1932, Contribution of the TAPPI non-fibrous raw materials committee.

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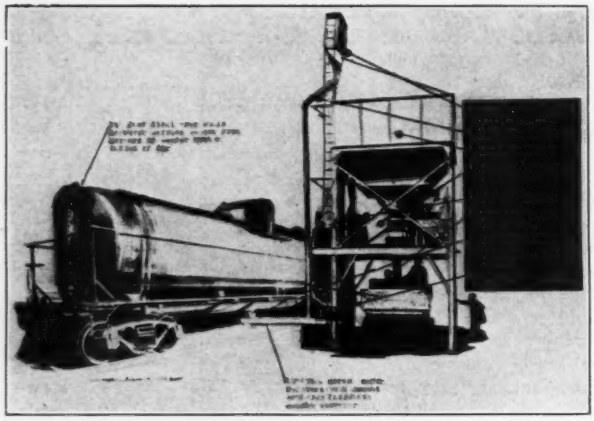

FIG. 2

liquids is easily made tight against leakage, the new tank-car-shaped car for dry commodities is made tight against external moisture with equal ease. The new car is provided with a dome which contains the necessary machinery (a 25 h.p. motor; either a.c. or d.c. current motors can be provided) for unloading. Conveyors are provided which bring the load toward the center and automatically discharge the material from an outlet in the center and beneath the car.

The new car has a capacity of about 1500 cubic feet of volume and a weight capacity of slightly over sixty tons.

It has been tested with various dry commodities and is regularly conveying pebble lime at the present time. (Fig. 2). As is well known, cement is a material which flows freely when aerated, but with the jolting to which it is subjected when being transported over the railroads, will pack until it is almost impossible to shovel. Cement affords no problem to this new car and no difficulty is experienced in completely unloading this material as might be expected, due to its bridging tendencies.

One oil company is about to affect considerable savings by changing from hydrated lime in bags to ground quick lime in bulk. This saving is made possible by the lower price of quick lime in bulk, as well as the saving in freight, which amounts to approximately 30 per cent.

While an appreciable labor saving is effected, a still further advantage is the reduction of dust, losses of lading, absence of damage due to moisture, and the ability to ship toxic and otherwise dangerous dry commodities with safety.

Casein

By A. E. Regnier[11]

In December of 1930 casein prices reached the lowest point for that year, this being about 9c a pound. From then on until April, 1931, prices were fairly steady.

Beginning with April, however, and continuing until June, there was a very sharp drop in prices, and the market reached the low point of about 5c to 5¼c a pound for casein; this in spite of the fact that due to a duty of 5½c a pound on casein it was practically impossible to import any casein for this market, so that this drop occurred even without the competition of foreign production.

In July prices began to improve, and advanced gradually to about 7½c a pound, which is the market price.

Even at this price there is still very little incentive for importation of foreign casein, inasmuch as this allows only about 2c c.i.f. United States port to the foreign producers; the balance being taken up in duty.

It appears, therefore, that domestic production has been well able to take care of the consumption, which is acknowledged to have been very poor, during the past year.

[11] Paper Makers Chemical Corporation.

It is rather significant in looking back over the records of past years to note that prices during 1931 reached a lower point than the price in the last severe decline in casein in 1921. We might also repeat the fact that from the low prices in 1921 there was a steady advance over a period of a year, culminating in the high level of 25c a pound due to lack of supplies. There is no doubt that during the past year there has been a considerable reduction of the output of a number of plants making casein in this country for the simple reason that it was not profitable to make it at this price. This was true in spite of the fact that there was a very poor outlet for milk in other channels, and this might lead us to expect that just as soon as consumption begins to improve and approach anywhere near normal, prices will be bound to advance, and we may even have another shortage such as occurred in 1923.

Due to the very poor prices which can be obtained in the Argentine for casein, their production, of course has been greatly curtailed, and both in this country and in the Argentine it would take some time to increase production sufficiently to take care of normal demands.

At the present time prices are considerably firmer, and we believe that in the main surplus stocks have been pretty well exhausted.

There has been nothing new in the way of scientific developments in the manufacture of casein, although we might mention that the grain curd method developed by the Bureau of Agriculture has produced a casein which has proven to be a high grade number one quality.

Clay and Fillers

By C. H. Champion[2]

The year 1931 has probably brought about changes in the paper clay industry that no one had ever anticipated. The increasing in efficiency of mining and milling of clays, together with the general trend toward lower prices have brought about a price situation that two years ago would have been almost unbelievable. This, together with the marketing of gypsum, have been the two most important changes in the clay situation, pertaining to the paper industry.

The coating clay situation has remained pretty constant during the entire year.

Talc is still being used by some mills for particular purposes, and decidedly to their advantage.

Due to the very good white color of the gypsum that has been placed on the market during the past year, together with the very attractive price that it has been offered at, quite a considerable tonnage has been disposed of by gypsum producers. It has been serving a very definite purpose in some mills. Each mill has found, however, that it is necessary for them to work out their own particular problem when using this material.

The filler clay consumption has largely been of domestic production and, there again, price has been the controlling factor, which, during the past three months of 1931, due to exchange differences, in some localities, has favored the use of imported clays.

Air separated clay was used more extensively during 1931. This was principally due to price and efficiency in producing. Mills, particularly large users, which heretofore had considered nothing but water washed clay, are now operating on air separated clay, having found that the decreasing cost in handling and the price per ton at the mine, have more than offset any difficulties in using this from a manufacturing point of view.

Looking into 1932, it seems as though the price should remain staple for some years to come and that the paper manufacturer is now receiving a better and a more uniform product at a lower price than either he, or the producer ever expected.

[2] Assoc. Member TAPPI, manager paper mill dept., R. T. Vanderbilt Company, New York, N. Y.

Dyes and Pigments

By J. C. Schmidt[3]

There have been no recent extraordinary developments in this field and our remarks for the 1930 report can be considered as almost entirely applicable to the year 1931. The domestic dyestuff industry has become one of the most stable and dependable sources of raw material used by the paper mill.

Dyestuffs prices as a whole have held to a fairly stable level as compared to the year 1930. There have been some minor recessions particularly on specialties; also methyl violet, one of the tonnage colors used by the paper industry, is selling at a slightly lower level.

Dyes continue to displace pigments in those few remaining mills where they are used. The reason is obvious because of the insistence on the part of paper users for non-twosidedness.

Technical assistance in connection with application is more important than ever before, and this feature of merchandising is constantly beng given increased attention by the dye manufacturers. It can safely be said that at least as great, if not a greater proportion of all paper production is now being colored than ever before.

Certain activities on the part of the mills themselves is requiring investigation and research by the dye manufacturers. An important example is pH control. Some dyes are sensitive to varable conditions of pH, especially as regards retention and, to a lesser extent, shade. However, each mill is more or less of an individual problem and in instances of this kind it is by all means profitable for a mill to cooperate closely with its dye source and to rely upon the advice of its application experts.

The possible developments in sizing particularly "solvent sizing" will require coloring investigation on the part of the mill planning to adopt such systems. Here again it is positively of utmost importance for the dye source to be consulted. Other sizing developments having to do with severe alum reduction, etc., should always be contemplated with exact knowledge as to the probable changes which will have to be made in coloring practice.

We would emphasize again the sales value to the paper manufacturer of fastness to light, shade uniformity, and non-twosidedness. This past year has been one of increased emphasis for these qualities and the alert mills have been able to meet the requirements.

Lime and Limestone

By O. L. Cook[4]

The past year has witnessed very little progress in the application of lime or limestone as it is used by the paper industry, and there have been no radical change in methods of manufacture. Some few of the manufacturers who produce nothing but chemical lime and maintain research work with chemical control of manufacture have introduced refinements which have enabled them to produce a more uniform product. In some cases, stone selection in the quarry has resulted in a marked improvement in physical characteristics.

There has been a tendency during the year by the larger consumers to use bulk lime, or calcium oxide, or calcium hypochlorite in place of hydrated lime, and results have been very satisfactory. Equipment for slaking of whole carloads at one time has successfully been inaugurated.

Probably the most notable developments as regards lime and limestone have been in connection with transportation.

The order of the Interstate Commerce Commission in the Ten Per Cent case, granting the carriers an increase in freight rates and made effective January 4, 1932, will, of course, have its effect upon the ultimate cost of lime delivered to the purchaser. It will result in an increase of twenty cents (20c) per ton on the finished product and an approximate increase of ten per cent in other freight charges incidental to the manufacture thereof.

The question of the application of lower rates on so-called fluxing lime has been confronting the industry in official classification territory and adjacent territory for the past few years. Conditions became so chaotic that defendant carriers petitioned the Interstate Commerce Commission to amend the order seeking the removal of the reduced rates on so-called fluxing lime having no commercial value for building or chemical purposes. As a result of this petition, the Commission on July 16th, 1930, reopened the proceedings in I. C. C. Docket 16170 on this particular question. Hearings were held at Washington, D. C., December 4th to 6th, inclusive, 1930, and March 16th and 17th, 1931. The case has not as yet been reported owing to what has been going on in connection with the Ten Per Cent case. However, a report should be rendered momentarily which will settle the question one way or the other as the application of the proper rate to apply on this particular traffic.

The transportation of lime by the carriers during the past year presented no particularly difficult problems to the shipper or the consignee. Deliveries for the most part were made in record time, with little or no delay in road haul or terminals. Equipment, both box and gondola, was adequate and most of the equipment was in service on the line of ownership. However, the curtailed activities of the carriers with respect to car repairs became more evident. This drastic retrenchment, forced upon the carriers by present economic conditions, resulted in complaints from the purchaser on account of damaged condition of delivered products. Repairs, except for absolutely essential work is apparently at a standstill. This behooves the shipper and the customer to "bear with the carriers" during these trying times, to take extra precaution in loading and unloading cars. Incidentally, the rejection of equipment not suited for lime loading is occasionally necessary. Such action occasions unnecessary switching, but claims can and should be avoided.

No essentially new products have been developed, the industry offering lime in various forms and sizes: run of kiln lump, crushed, crushed and screened, pulverized, and hydrated. The crushed lime is obtainable in waterproof paper lined burlap bags, double wall paper bags for hydrated lime, and the new waterproof, multi-wall paper bag in which pulverized quick lime is shipped. To those not having sufficient storage or limited requirements, the multi-wall bag offers many advantages.

Lime sold by producers in the United States in 1930 to paper mills amounted to 378,721 short tons, valued at $2,652,232.00. These figures include both quick and hydrated lime. This represents a decrease of 32,296 tons valued at $405,118.00, a reduction of 7.9 per cent in quantity and 13.3 per cent in value of the product. The average unit value of lime showed a decrease from $7.44 per ton in 1929 to $7.00 per ton in 1930. Sales of lime used in the manufacture of chemicals—1,840,155 tons, valued at $13,193,437.00—decreased 20 per cent in quantity and 21 per cent in value as compared with 1929. (Figures obtained from reports submitted by lime manufacturers to the U. S. Bureau of Mines, Department of Commerce).

A preliminary survey of sales and distribution of lime and limestone to paper mills for the year of 1931 is not available, but it is evident that when finally completed the figures will show a drastic reduction in tonnage and a lower average value, due to the present economic situation. Some manufacturers report as much as 50 per cent less sales this year as compared with 1930.

The lime industry, laboring under severely restricted production, together with reduced mill prices caused by severe competition within the industry, has during the past year undoubtedly witnessed the lowest prices for 18 or 20 years. The situation has become so acute that the strengthening of prices on new busi-

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[4] Assoc. Member TAPPI, sales manager, Lehigh Lime Company, Chicago, Ill.

ness for the ensuing year is not only evident but necessary, if the lime manufacturers as an industry are to remain solvent.

Pyrites

By F. J. Curtis[5]

While there has been little new in this field during 1931 there has been put into operation at a Canadian paper mill a pyrites burning plant of the flash roasting type developed by H. O. Freeman. In this plant finely divided pyrites is burnt much in the same manner as powdered coal, the hot gases being passed through a waste heat boiler where 1 pound steam per 1 pound pyrites is recovered. The gases are then cooled and cleaned by water scrubbing before passing to the bisulfite towers. In regions favorable to pyrites this development is of interest to pulp mills.

Rosin

By E. J. Turner[6]

The year 1931 has been a most interesting one in the rosin industry. The year 1930 was considered a remarkable one on account of the tremendous and rapid reduction in market quotations from $7.25 for G grade rosin in April to $3.90 in August. The developments for 1931 have been even more surprising.

1931 has witnessed still further reduction in values until G grade gum rosin was finally quoted at $2.45 per unit of 280 lb. gross weight. This is below the cost everyone had thought was an irreducible minimum. Not only has rosin gone to "pre-war levels" but it has gone far below that. Records back to 1911 do not show G grade gum rosin quoted at the exceptionally low levels established during 1931. The paper industry has thus obtained rosin size at prices which are probably lower than have ever existed within the memory of any one now connected with that industry.

Most interesting of all the events in the rosin industry and the one largely responsible for the price trend during the year was a gigantic attempt to control prices and production through the organization of what became known as the Gum Turpentine-Rosin Marketing Association. The scope of this article does not permit a detailed description of what took place. Briefly it was thought that by combining the producers and dealers into one association, capital could be raised whereby surplus rosin could be kept off the market and held until demand improved. It was planned that the producers would be financed from money raised by the association and that the association would in turn set the price at which rosin would be sold. Naturally it was intended that this price would be considerably above the levels which had existed during the latter part of 1930 and the early part of 1931.

In carrying out their plans, large sums of money were borrowed from the banks and the incoming supplies of rosin were taken off the market as planned. The association placed bids on the Savannah market which, in line with ancient custom, established the selling basis for rosin, and, in turn, for rosin size, since this is based on the published cost of rosin.

Through activities of the association, the Savannah rosin market advanced during the year. It was held at levels around $4.80 to $5.25 during May and June. During early July the market quotation was raised rapidly to a high point of $6.10 which was held from July 3 to July 11.

During this time the rosin industry looked with interest on this attempt to beat the law of "supply and demand" and, as has practically always happened elsewhere, the plan eventually failed, "supply and demand" finally winning the battle. The association counted on a very drastically reduced production and a moderately improved demand during the year. Unfortunately business conditions continued to get worse so that demand fell off instead of improving. Unfortunately for the plans of the association, the expected curtailment in production was not realized, partly because certain independents, who were not bound by any promises to the association, saw an opportunity to produce larger quantities of rosin at a wider margin of profit. It was also a fact that producing conditions were very good, thereby tending to make it difficult to curtail total production.

The association finally ran out of funds after storing tremendous quantities of rosin and turpentine and during July found it necessary to cease bidding on the Savannah market. The result was that the published market dropped very rapidly from $6.10 on July 11th to $2.85 on July 15th. It held levels around $2.85 to $3.00 through August and September, dropping off somewhat at the end of September and during October, until it was finally posted at $2.45 in December. The year ended with the G gum market quoted at $2.50 per unit of 280 pounds gross weight.

Throughout the year stocks of gum rosin continually became larger and larger and the year ended with stocks on hand in the South which will probably establish a record. It is expected that lack of profits will do what the best brains of men could not do; namely, to reduce drastically next year's crop. However, unless demand increases more than is expected, the paper industry will probably continue to purchase rosin and rosin size at a very low level during the coming year

Rosin Size and Engine Sizing

By A. C. Dreshfield[7]

For the engine sizing of paper the use of rosin as the base, has gone on uninterruptedly during the 125th year since its discovery as a means of sizing paper. For reasons explained elsewhere in this report under the heading of "Rosin", 1931 has seen the purchase of rosin and rosin size at the lowest price in the history of modern paper making. Unquestionably the major development has been economic in nature in the form of a sharp downward price trend, following simultaneously the breaks in the rosin market.

From a technical aspect there has also been considerable activity and development. Any development report, if it is to present a true picture, must not only mention improvements brought about during the period covered by the report, but must also look to the period just past to see what has become of the developments then reported in that period. In line with this principle, we must momentarily return to last year's report to review new processes introduced in 1930.

The production of extremely high free rosin size in the form of colloidal dispersions of pure rosin broken down in a colloid mill and stabilized with a material such as casein, has not developed beyond the experiment stage at which it was last year.

The method of producing a size milk by passing a caustic solution of constant strength and at a constant rate over crushed rosin, is still in use in some mills in which it was introduced, but its acceptance beyond that point and its adoption throughout the industry has failed to be noted as far as we are aware.

This same situation applies to the method of sizing which consists of grinding dry rosin and dry caustic in a ball mill to which is then added water and the mixing continued until the emulsion is produced.

1931 has seen two additional developments, which still are in what might be called the experimental commercial stage. The earlier of the two developments is saponified rosin size in the form of a substantially or completely anhydrous material, capable of being shipped in the dry form in bags or barrels. This development has undoubtedly been hastened by, and the result of, existing economic conditions and has been prompted by a desire to reduce the cost of transportation on water and the metal con-

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[6] Paper Makers Chemical Corporation, Kalamazoo, Mich

[7] Member TAPPI, Paper Makers Chemical Corporation, Kalamazoo, Mich.

tainer necessary when using rosin size paste. Dry size received in bags in the form of small lumps or an impalpable powder, is being used experimentally in a number of mills. In most cases it is being charged directly to the beating engine, although in some cases it is being emulsified, at the mill, prior to its introduction into the stock.

A second development, the announcement of which was made during the latter part of the year, consists in an attempt to size paper by the use of a solution of rosin in an organic solvent. It is claimed that sizing can be accomplished without the use of alum in the beaters, by applying this solution of rosin to the paper in a vacuum dryer after the sheet has been formed, pressed, and practically completely dried. Recovery of the solvent is an important key part of the process. It is understood that this process is in the experimental stage with the exception of a first commercial installation being tried in the near future. As with other technical developments of such recent nature, its value and its economies cannot be reported at this time, but must wait for future facts.

Salt Cake

By F. J. Curtis

The conversion of Saskatchewan salt cake to niter cake at the Canadian nickel plants and the Canadian tariff imposed in the latter part of 1930 have cut down considerably American exports of these two materials, although the exact figures for 1931 are not yet available and the decrease will be partly due to depressed business conditions.

Sodium Aluminate

By F. J. Curtis

Further development of sizing with sodium aluminate and alum at pH 6-6.5 is reported to have taken place. Such procedure is particularly desirable for fine papers, boards for coating and for certain acid sensitive dyes. Interesting results have been reported from the standpoint of greater strength after ageing.

Starches

By F. H. Knowlton[8]

The price trend of starch products has been in line with other materials and at this writing is lower than it has been since May, 1922 and is directly in line with the prices of 1915 and 1916. There has been an average reduction of about 27 per cent in prices in this commodity during the past year.

There have been no new starch products of note introduced to the paper trade during the past year. Work conducted by the various starch manufacturers has been along the lines of adapting the regular starch materials to specific uses and the determining of new uses for their materials. The methods of manufacturing remain virtually the same as they were in the preceding year.

However, due to economic conditions, there has been considerable work conducted to ascertain the ultimate results obtainable by starch and much scientific data collected regarding the application of various starches to paper and an effort made to find out just what results were obtained and how maximum results could be obtained.

The use of starch in tub or surface sizing of writing, ledgers and bonds, has not changed materially, but there has been considerable increase in the use of starch materials for this particular purpose due to the lower cost of starch sizing materials and the greater efficiency obtained by them through scientific investigation as to the most suitable materials for this purpose.

The use of starch tub sizing materials on offsets has been materially increased, as this operation seems to increase the efficiency of the type of sheet considerably.

The use of starch as an aid to engine sizing has also shown an increase and considerable work has been done on the use of a modified starch as protective colloid as an aid to rosin sizing, it having been found that starches of certain types do impart certain advantages along these lines due to their colloidal property.

There have been efforts on the part of certain manufacturers to add certain chemicals to starches, with the idea of increasing their efficiency in the beater, but this work has not progressed far enough to form any definite conclusions.

Considerable work has been done in improving the quality and efficiency of starch coating materials, but due to the low cost of casein during the past year, this work has not advanced to any considerable extent. However, there are now on the market, starches which will do this work far better than any developed previously, but the general use of starch for coating has not generally increased during the year. The Bureau of Standards have completed some work on this subject and their findings have been published.

There has also been considerable work done on the application of starch to the calender sizing of paper, and the adaption of starch and mixtures of starch and various waxes for waterproofing and greaseproofing board, but this work is still in its infancy and we should expect some developments on this particular phase of the application of starch during the next year.

The demand for boards with surfaces treated to withstand moisture and grease, particularly in the quick-freezing industry, have stimulated efforts on the part of the starch manufacturers to develop materials for this use.

The use of starch, particularly the modified starches, in calender coloring and calender staining, has increased considerably during the past year.

There have also been brought on the market, several new starch adhesives for the combining of paper and board, which show promising results.

The starch industry have made efforts to increase the efficiency of their products and to make recommendations which were based on experimental data much more during the past year than previously.

Considerable work has been done at the Bureau of Standards, investigating the effect of starch when used in the beater and as a surface size and this work is being continued.

There is also some work in progress at the Institute of Paper Chemistry at Appleton, which is not yet completed, but should be ready for publication during the coming year.

Wax Sizes

By R. W. Kumler[9]

During the past year the demand for sizes containing wax for use in the beater has increased. This expansion has been especially marked in the field of book papers where these sizes are being employed to improve the surface of papers for printing. Increased use has also been noted in products which must fold smoothly, such as coating stock, envelope papers, and box board. There has also been a good demand for wax sizes in papers and boards that must be highly resistant to water. There has been some further development in connection with hanging papers and papers which must resist the action of alkali.

Most of the wax sizes now being employed contain paraffin as the chief wax ingredient because of its adaptability, abundance of supply, and low cost. Paraffin wax is supplied to paper mills usually emulsified with rosin or with some other wax which is at least partially saponifiable. Rosin is by far the most widely used saponifying agent but montan wax and colloidal clays are also used to a considerable extent. In Europe montan wax has been more widely employed, usually without admixture of paraffin. At least one such product has been introduced into America but has not gained extensive application probably because of its cost.

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[9] Assoc. Member TAPPI, Bernett, Inc., Cambridge, Mass.

Wax used in the beater tends to produce a smooth surface, increased pliability, hence smooth folding and minimum tendency to curl, and high water resistance. It has recently been brought out that waxes absorb the vehicle of printing ink without taking up the pigment thus leaving the latter on the surface of the paper. This gives the effect of quick drying with a minimum of "show through."

A number of important domestic and foreign patents have been issued to Rafton covering the use of wax sizes with carbonate fillers. These patents disclose processes which make it commercially feasible for the first time to employ calcium carbonate as a filler in sized papers. They should have considerable influence in broadening the field for the use of wax sizes.

Some advancement has been made in the application of wax emulsions to the surface of papers and boards. A process has been patented wherein wax emulsions are applied to paper through the water boxes at the machine calenders. Water exhibits a high surface tension to a surface so treated, oil resistance is slightly increased, and one sheet slips more easily on another. Sizes used for such purposes have very high wax contents.

Since the advent of wax sizes, much knowledge as to their preparation and application have been gained and many of the difficulties overcome that attended the earlier attempts to use wax in the beater. While there are yet problems to be solved in this connection, sufficient progress has been made that waxes seem to be permanently established as sizing agents for papers and boards.

Limestone and Salt Cake on the Pacific Coast

By W. Hirschkind[10]

Salt cake for the Kraft pulp mills in the Northwest is at present supplied from two sources, one the German material from the Kaiseroda Potash Works and the other the by-product salt cake from an American company. The latter concern has recently completed an oxidization plant for ammonia and expects to manufacture in the future its nitric acid from ammonia with the consequent abandonment of the manufacture of salt cake. However, the American company seems to have sufficient stocks of niter cake on hand to guarantee deliveries under their contracts for at least a year. Developments on utilization of a salt cake from natural sources on the Pacific Coast are under way but it is somewhat premature to comment on these.

There are a number of sources of limestone and lime on the Pacific Coast. Limestone and lime of high quality are supplied to the pulp mills on the Pacific Coast from deposits at Blubber Bay, B. C., at Roach Harbor in Puget Sound, Washington, and at Sonora, California and Sloan, Nevada.

Oyster shells of the San Francisco Bay are being harvested and burned to high grade lime. Limestone for pulp mills is also supplied from quarries in Eastern Washington and Eastern Oregon.

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Preserved Wood for Paper Mill Construction*

By H. E. Davis[1]

The large amount of timber used in the construction of pulp and paper mills especially for roofing makes the question of protecting that lumber from decay an important one. In the handling of wood pulp and paper certain phases of the operations result in warm, damp atmospheres which rise and come in contact with the under side of the roof. This moisture-laden atmosphere results in conditions ideal for decay, which, under the favorable temperature prevailing, advance rapidly. Expensive repairs and even renewals are necessary in short periods of time unless decay-proof construction is used. Proper design is an important factor but can not be relied upon to bring about full protection The detrimental effect of moisture occurring by reason of imperfect construction, extreme temperature changes, or failure of ventilating equipment to operate at full efficiency is eliminated by preservative treatment. Permanence is thus insured at a negligible cost. Treatment when proper grades of lumber are chosen will add but little to the cost of material, and nothing to the cost of installation.

Insurance Company Report

The Associated Factory Mutual Fire Insurance Companies, after an investigation of a great number of roofs, stated that:

"Decay occurs very frequently in roof timbers and roof plank due to the condition of moisture and temperature to which the roofs are subjected. The average life of untreated and uninsulated plank roofs over highly humidified weave rooms, poorly ventilated paper-machine rooms, and can rooms of bleacheries, is eight to ten years." It is further stated that visits made in 1920 to eighty paper mills disclosed that fifty-three had made or would make replacements of rotted roofs within a year.

The ages of the rotted sections were in some instances as low as five years.

Causes of Wood Decay

Decay in wood is caused by fungi, a low parasitic form of plant life. Fungus spores which are so minute that they can be seen only with the aid of a microscope are prolific and float through the air often for long distances. Lodging in cracks or crevices of wood where conditions are ideal, they germinate, sending forth filaments which quickly penetrate the wood in all directions. The fungus in its growth breaks down and consumes the wood fibre as food, and the wood reaches quickly, that condition known as "rotten."

Four requirements are necessary for fungus growth: viz., air, favorable temperatures, food, which is supplied by the wood itself, and moisture. Removal of any one of these requirements inhibits fungus development and establishes immunity to decay. Temperatures existing in buildings are usually favorable throughout the year. Air can not be excluded, nor can care in construction be relied upon to prevent sufficient moisture to permit fungus growth from reaching the wood. Impregnation with a chemical preservative renders the wood toxic to fungi and insects and thus destroys its food value. Rendering toxic the food supply on which the fungus must depend for food is the basic principle of wood preservation.

Fungus Growth

Fungus growth takes place at a rather wide range of moisture content in the wood. The most favorable conditions for development occur when the wood contains moisture in amounts of from 30 to 150 per cent of its bone dry weight. At moisture contents above 150 per cent development is arrested, but fungi may grow at moisture contents as low as 25 per cent, though germination and development of new plants would be unlikely to occur at the lower figure, all activity ceasing at 20 per cent. Fungi may, however, remain dormant for long periods of time,

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., Feb. 15-18, 1932.
Contribution of the TAPPI materials of construction committee.

[1] Chemical engineer, Grasselli Chemical Company, Cleveland, Ohio.

only to resume activity with the reestablishment of favorable moisture conditions. Slight breaks or imperfections in the waterproofing membranes usually used may admit sufficient moisture to permit decay.

Besides the likelihood of exposure to outdoor influences, atmospheric conditions within the building itself are conducive of decay. In mill rooms of paper mills, the processes involved in mixing and dewatering the pulp, and rolling and drying the paper, give off warm, damp atmosphere which comes in contact with the under side of the roof. Even with the fans and other ventilating equipment operating effectively, condensation may occur at joints or even on the under side of or within the roof.

Structural Conditions

For mill buildings, types of roof construction which follow recommended practice are designed to prevent condensation at the under side by raising the cool zone where condensation will occur. Proper insulation of the roof slab raises the cool zone until it occurs within the slab itself. A waterproof membrane near the under side of the roof, below the locus of the dew point, is an aid in preventing the penetration of moisture laden air to the zone where temperatures are sufficiently low to cause condensation. Insulation of course is necessary to guard against dripping condensate which might injure the product in the course of manufacture.

Fortunately, wood is not only a desirable supporting medium for the roof but is itself an effective insulating material far more efficient than is generally realized. It has been found that 0.70 is an average figure for the conductivity co-efficient of light woods. An inch thickness of wood then is equivalent, for insulating purposes, to a 7/16 inch thickness of the type of insulating board commonly used. Leaks occurring in the waterproofed top covering may bring about saturation and consequently greatly lowered efficiency of insulating fabric, while the conductivity of wood is only slightly affected by such leaks.

The structural hazard of decay is too great to be ignored, and every practicable preventive measure should be taken. Inability of roof fastenings to hold in decayed wood increases the possibility of windstorm damage, while sound timber on the other hand not only minimizes the danger from storms or overloading, but possesses a marked fire resistance in comparison with wood in which decay is present. The economic value of the roof which will remain sound and not require frequent repairs or occasional renewals is well recognized.

While proper design and careful construction will provide a well insulated roof, occasional leaks will occur which result in moisture gaining access to the roof. Extreme changes of outside temperatures may also cause a lowering of the cool zone and cause condensation. Skylights and ventilators may often cause rapid rotting in roof sections adjacent to them, since leaks occur and insufficient insulation is sometimes provided. The impracticability of excluding all moisture makes it highly desirable that fungus activities be inhibited by proper preservative treatment.

Wood Preservative

The two wood preservatives, coal-tar creosote and zinc chloride, considered standards by the American Wood-Preservers' Association, were used for the preservation of over 98 per cent of the 4,344,000,000 feet of timber subjected to treatment at United States plants during the year 1930. For all roofs where painting is usually desirable, the zinc chloride treatment is recommended, since creosoted material can not usually be satisfactorily painted.

Zinc chloride has no odor and does not discolor the wood, which can after treatment be painted any desired color. Long time commercial installations as well as tests conducted by the Paint and Varnish Association and the United States Government, show in general that wood treated with zinc chloride holds paint equally as well as untreated lumber, if it has been allowed to dry before painting.

Zinc chloride is injected into the wood in solution having a strength of 3 to 5 per cent. Standard specifications of the American Wood-Preservers' Association prescribe for general construction a minimum retention of ½ pound of dry salt per cubic foot of wood. It must, however, be borne in mind that the specified amount is a minimum, and for use where severe conditions exist or decay alone is the factor limiting the service life of the installation, it is recommended that retention of ¾ or 1 pound of dry salt per cubic foot be stipulated. While the minimum amount of preservative will, when injected into the wood, have greater toxicity than is necessary to kill fungi, the larger amounts are advisible in order to secure a better distribution and diffusion of the chemical through the wood, as the excess provides an appreciable factor of safety. The additional half pound of preservative increases the cost of treated material but little, usually by not more than $2.25 per thousand feet board measure.

Lumber treated with zinc chloride has been used during recent years in increasing quantities for mill and building construction. A long list of paper and textile mills have replaced decayed roofs of untreated lumber with zinc chloride lumber, and many mills have been provided with treated timber roofs at the time of construction. While records which establish the exact period of service life that may be expected from zinc chloride treated lumber used in mill roofs are not yet available, an idea of the value of preservative treatment may be gathered from records established in other fields where chemical preservation has been practiced for a longer period of time. It can be stated conservatively that pressure treatment with the recommended absorption of zinc chloride will increase the service life of untreated timber from 3 to 5 times in locations where unusually severe conditions of exposure prevail.

Sap pine posts treated with adequate absorption of zinc chloride were, after 17 years' exposure, found to be perfectly sound, whereas untreated posts set at the same location were badly rotted in 3 years and totally destroyed in 6 years. An inspection in 1930 of experimental ties by the C. B. & Q Railway disclosed the average life of untreated ties in the experimental lot to be less than 6 years and the average life of ties treated with ½ pound of zinc chloride to be 17½ years. In both these cases timber was in contact with the ground and exposed to rain fall, which must in time cause some loss of preservative. The ties of course were, in addition to direct exposure to the elements, subjected to severe mechanical wear which, rather than decay, is usually the factor which limits the service life of the treated tie used under tracks carrying heavy railway traffic.

A recent inspection of zinc chloride treated mine props in one of the mines of the Allegheny district showed the timbers to be perfectly sound after 25 years' use. Chemical analyses of random specimens disclosed the presence of sufficient quantities of preservative to insure many more years' service. Conditions of moisture and temperature are such that untreated timbers of a grade and class possessing considerable durability in the natural state have given an average life of 4 years. In building construction, where timber is protected from direct contact with heavy rainfall or running water, it is generally conceded that the roof built of properly treated timber will have a life equal to that of the ordinary building devoted to manufacturing purposes.

Properties of Heartwood

Though the heartwood of the same species may be classed as durable and decay resistant, the same periods of service can not be expected from these species as from properly preserved timber. The decay resisting qualities of different pieces of lumber from the same species vary widely, and even two pieces cut from the same tree may possess markedly different durability. The sapwood of practically all species has a low resistance to decay and a short life may be expected from sapwood when used in its untreated state under decay producing conditions. Sap edges on lumber having a very high heart content may be attacked by decay, causing weak joints and consequently roof defects which

may develop into leaks. Such leaks, by saturating the insulating material and lowering its efficiency, may lower the cool zone and permit condensation at the under surface of the roof.

It must be borne in mind that while lumber cut from sapwood is not durable in its natural state, it is admirably adapted to preservative treatment and is in no wise deficient to the required structural strength. By treatment, practical permanence is imparted. Moreover, grades of lumber having an unrestricted sapwood content are cheaper than those grades for which practically all heartwood is specified. Satisfactory grades treated with ¾ or 1 pound of zinc chloride per cubit foot cost usually less than untreated grades having sufficient heartwood volume to warrant consideration of their use.

If durability is to be obtained, treatment must be administered by standard pressure processes. The use of the most effective preservatives will not, unless properly applied, bring about greatly enhanced durability. Experience covering a long period of years has definitely established the superiority of pressure processes. Proper penetration and distribution of the preservative are essential if maximum periods of service are to be expected under conditions conducive to decay or insect attack. Where lumber is required in carload lots or greater amounts, the cost of pressure treatment will usually be considerably less than the cost of superficial treatment given on the job, since plants are equipped for expeditious handling.

This discussion has dealt only with the protection of roof timbers from decay. The use of chemically preserved timber is, however, by no means confined to roof lumber in modern mill construction. Beams and columns frequently collect sufficient moisture, particularly at joints or contact points, to cause decay. Floors often are subjected to conditions conducive to decay. Many subfloors are laid in close contact with the ground. Modern practice sanctions the use of pressure treated timber for all vulnerable units susceptible to decay. While zinc chloride, because painting is usually desirable, is preferred for interior work, both creosote and zinc chloride are widely used for the treatment of subfloors, the choice of preservative depending on the preference of the builder and economic considerations.

Evaluation of Paperboard Drier Performance*

By F. C. Stamm[1]

There is a very definite need today for a standard basis for comparing the drier performance on a number of machines making the same or similar grade of product. All of us have tried at one time or another to draw a comparison with some machine making an exceptionally good drying record only to find that the speed was not quite the same, the moisture content entering or leaving the drier was different, the steam pressure was not the same, and probably after all their sheet was not closed up as well as ours so that with the information available we had no way of making a definite comparison between the two machines. We therefore concluded that our performance was good enough and let it go at that.

There are so many variables that enter into the matter of drying paper that unless we standardize and evaluate these variables so as to bring all drier performance to the same basis, we may never find two exactly similar machines operating under exactly the same conditions and making exactly the same sheet of paper, so we may never get an accurate comparison on which to judge our performance. However, we believe that it is possible to standardize these variables so that we could always know, regardless of conditions on the machine, just what steam pressure we should use in order to dry satisfactorily the particular sheet which we were making. This is not a matter of scientific research so much as it is a matter of collecting and analyzing the actual operating data covering the drier performance of hundreds of machines, and from these data setting up empirical formulas on a standard basis.

The heat and power committee of the Technical Association has endeavored during the past two years to collect data covering the drier performance on various machines. A very simple questionnaire was made up containing items which could be answered by almost any mill superintendent without runnnig extensive tests on the machines. The only item of a technical nature asked was for the moisture content to and from the drier and most mills today carry these data on their daily report sheets.

We sent out over one hundred and fifty of these questionnaires to various board mills all over the country and although we did not receive as many replies as we would have liked, still the data we did receive when tabulated and analyzed enabled us to draw some very interesting conclusions. In drawing conclusions from empirical data, it is, of course, necessary to cover as wide a variety of conditions as possible. The results and conclusions which we set forth in this paper are therefore not to be considered as absolutely accurate and final but more in the nature of a preliminary contribution which is open to suggestions and criticisms.

We hope that all board mills interested in the subject of drying will check over the data which we present, compare the standards which we have set up with the operating conditions on their machines, and send us their comments as to whether their performance is above, below, or just in line with the standards which we have established. The more data we receive on this subject, the more accurate will be our final determination of standards.

We would also like to state that our next line of endeavor will be a study of the drying of newsprint and it seems to us that this should be a comparatively simple problem since the substance and weight are so uniform. We expect to send out these questionnaires in the very near future and ask all newsprint men to fill out these data sheets as soon as possible and return them to us. We are sure that the value of the information which will be obtained from these questionnaires will more than offset the few minutes required to fill out the necessary data.

Recommended Basis for Judging Drier Performance

In order to study the various data received, it was first necessary to adopt a standard basis for comparison. At present there are a number of standards in use, some based on the production per square foot, per hour, others on the water evaporated per square foot per day. Some use the total drier surface, some the active width covered by the sheet, and still others the active circumference in contact with the sheet. There are arguments in favor of all these standards, but the committee has decided to adopt the standard of comparing drier performance based on *the pounds of water evaporated per square foot of drier surface per hour, the drier surface to be based on the total circumference of the drier and on the actual width covered by the sheet.* Reducing the whole matter to a basis of performance per inch of width eliminates the question of deckle width and helps to simplify the data considerably.

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* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., Feb. 15-18, 1932.
Contribution of the TAPPI heat and power committee.
Note: This paper is based on a survey made by the heat utilization in pulp and paper drying sub-committee.
[1] Engineer, The Upson Company, Lockport, N. Y.

To further simplify the matter, we have worked out formulas for various grades of paper based on the performance per inch of width. The standard formula is as follows:

$$\text{Evaporation} = \frac{\text{Speed} \times \text{Weight} \times \text{Moisture}}{\text{C} \times \text{Diameter} \times \text{Number}}$$

Where:

Evaporation = Pounds of water evaporated per square foot per hour.
Speed = Speed of machine in feet per minute.
Weight = Standard ream weight of sheet or in standard board, weight per 1,000 square feet. (See standard for constants given below.)
Moisture = Pounds of water evaporated per pound of paper dried as shown on the following table.
Diameter = Diameter of drier in inches.
Number = Total number of driers.
C = A constant for various grades as follows:

Board	=	4.36—Based on weight per 1,000 square feet.			
Board, Bristol and Tag	=	9.72—Based on	22½	x 28½	—500
Board Card	=	9.33—Based on	22	x 28	—500
Book	=	14.39—Based on	25	x 38	—500
Blotting	=	6.91—Based on	19	x 24	—500
Cover	=	7.88—Based on	20	x 26	—500
News	=	13.09—Based on	24	x 36	—500
Tissue	=	8.73—Based on	20	x 30	—480
Wrapping	=	12.57—Based on	24	x 36	—480
Writing	=	5.67—Based on	17	x 22	—500

POUNDS OF WATER EVAPORATED PER POUND OF DRIED PAPER

Percentage of Moisture in Sheet Entering Driers	Percentage of Moisture in Dried Sheet					
	5%	6%	7%	8%	9%	10%
60	1.375	1.350	1.325	1.300	1.275	1.250
61	1.435	1.410	1.385	1.360	1.335	1.310
62	1.500	1.475	1.450	1.420	1.395	1.370
63	1.565	1.540	1.510	1.485	1.460	1.435
64	1.640	1.610	1.585	1.560	1.530	1.500
65	1.715	1.690	1.655	1.630	1.600	1.575
66	1.795	1.765	1.735	1.710	1.680	1.650
67	1.880	1.845	1.820	1.790	1.760	1.725
68	1.970	1.935	1.910	1.875	1.845	1.810
69	2.062	2.030	2.000	1.970	1.935	1.900
70	2.163	2.140	2.100	2.070	2.040	2.000
71	2.280	2.245	2.210	2.170	2.140	2.100
72	2.390	2.360	2.320	2.280	2.250	2.220
73	2.520	2.480	2.440	2.410	2.370	2.340
74	2.650	2.620	2.580	2.540	2.500	2.460
75	2.800	2.760	2.720	2.680	2.640	2.600

$$W \text{ equals } \frac{M_1 - M}{100 - M_1} \text{ when}$$

W = Pounds of water evaporated per pound of dried paper.
M_1 = Percentage of moisture in sheet entering driers.
M = Percentage of moisture in dried sheets.

Example—Paper entering 30 per cent dry equals 70 per cent moisture.
Paper leaving 6 per cent moisture.
Pounds of water removed per pound of paper equals 2.14.

From the above standard formula it is possible to readily figure out the drier performance on almost any machine and if everyone will use this formula, we will be sure, in the future, to have all data compared on the same basis.

Analysis of the Variables Which Affect Drier Performance

After we have reduced all data to a common basis of evaporation per square foot per hour, there are still a number of variables to be considered. The six most important of these variables are: steam pressure, degree of hydration, moisture content leaving the driers, humidity of the air surrounding the driers, speed of the machine, and weight of the sheet.

Steam Pressure

On any one sheet of paper, drier performance will naturally depend on the steam pressure carried in the driers, and any standards which are set up will have to increase as the steam pressure increases. Our first step was therefore a matter of determining the direct relation between steam pressure and production on any one grade of paper. As will be brought out further in this paper, this relation seemed to hold fairly constant and we were therefore able to draw a curve and from the curve set up a formula which would give us the standard evaporation and from this, the standard production which we could expect for any given steam pressure in the driers. We therefore believe that the item of steam pressure can easily be standardized so that we can almost predict the exact production we can expect on a given sheet from a given steam pressure.

Degree of Hydration

This variable certainly affects evaporation to a very marked degree and it will, of course, be impossible to set up a standard for this item covering grades of product which are widely different. The only way we can hope to standardize this item is to separate the various classes of paper into groups having approximately the same degree of hydration and then set up performance curves for each of these groups. Thus newsprint, hanging and commercial wrapping could probably be included in one group; bonds, ledgers and various writings in another group; book and magazine in another group; the plain low grade chip boards in one grade; and the higher grades of bleached sulphite and manila boards in another grade. Kraft papers would naturally come in a group all by themselves. We believe that standards set up on this basis will nicely take care of this variable in hydration and our first step has been to consider the various grades of board, all of which seemed to have approximately the same degree of hydration.

Moisture Content Leaving the Driers

Drier performance is naturally affected greatly by the moisture to and from the driers, but since we are basing our performance on water evaporated, we practically eliminate the effect of the variable moisture entering the driers. However, we have not eliminated the effect of the moisture content in the sheet leaving the driers and this variable affects the drying capacity of the machine much more than most people realize.

To dry a sheet of paper to a moisture content of 8 or 9 per cent is not at all difficult. A very definite increase in steam pressure is necessary, however, if we expect to dry this same sheet to a moisture content of 4 or 5 per cent and we will find that we will practically have to double our steam pressure if we endeavor to dry this sheet to a moisture content of 2 or 3 per cent. This is due in part to the fact that as the sheet becomes dry it acts more or less as an insulator, and the less moisture contained in the sheet, the better insulator the sheet becomes, so that as we reach the very low ranges of moisture content we find it almost impossible to drive off the last traces of moisture in the sheet.

We believe, from observations we have made, that it will be fairly easy to standardize the effect of moisture content leaving the driers in the various classes having this same degree of hydration. We have not, however, attempted to do this with the information which we have received from board machines, but will discuss this later on in the paper when discussing the summary of this data.

Humidity of the Air Surrounding the Driers

On the average machine which is not equipped with vapor absorption nozzles blowing hot air into the pockets between the driers, the humidity conditions of the air surrounding these driers remains fairly constant. We believe that the small change in humidity of the outside air from day to day does not have a very great influence on the drying of the paper. We believe, therefore, it will not be necessary to take into account the humidity and effect of this air on the drying of the product.

However, on machines which are equipped with vapor absorption nozzles, there seems to be a very definite increase in drying and we believe it will be necessary to evaluate the advantages which are obtained from this type of drying and probably set up a separate individual standard on machines which are equipped with vapor absorption nozzles.

Speed of the Machine

There is no doubt at all but what the speed of the machine has some effect on the capacity of the driers. In other words, if you could run a specific sheet of paper at 500 feet per minute on a drier section having 30 driers, you would not be able to run 1,000 feet per minute if the same drier section was increased to 60 driers. The reason for this is due to the time element or length of time the sheet is in actual contact with each drier. We all know that there is an alternate cooling and heating of the opposite sides of the sheet as it passes back and forth over the driers. Naturally, the longer the sheet can remain in contact with the drier, the more thoroughly it will be heated and the more efficient will be the drying operation. The effect of this variable is not

great, probably not varying the production any more than 5 or 8 per cent but we certainly want to take it into consideration and as we gradually collect more data and find more accurate values for these variable factors, we will want to find a very accurate standard by which we can judge the effect of speed on the drying of paper.

WEIGHT OF THE SHEET

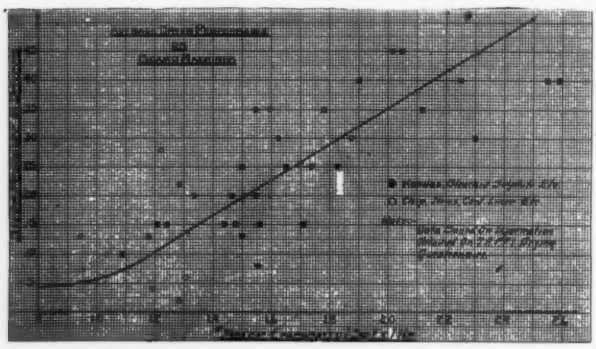
It has been the general opinion for some time that the weight of the sheet had a considerable influence on the drying operation. From the preliminary data which we have collected, it would seem, however, that this is not entirely true. We do not by any means say that a 32 pound sheet of news will not dry much easier than a 40 point sheet of chip board. We do believe, however, that on any one grade of paper the caliper can vary quite widely without materially affecting the drier performance.

Our conviction on this subject has been further strengthened by reading a paper on drying by Reinhard Schulze. In this paper, which was a German translation from Der Papier Fabrikant for Nov. 8, 1931, on pages 705-717 Mr. Schulze stated that after a considerable amount of accurate experimental work he was convinced that the weight or caliper of the sheet had very little if any effect on the drying. Our experience covering the data received on the drying of board seemed to indicate that it makes no difference whether the board was a 20 point board or a 40 point board, since we had reports of very excellent production on both the light and the heavy calipers.

Summary of the Data Received

After reducing all of the data received on the various questionnaires to the final basis of pounds of water evaporated per square foot of drying surface per hour, we plotted these values against the steam pressure used in each individual case and were very much surprised to find that the points fell on a fairly well defined curve. Not having enough separate replies from the better grades of board we decided to plot the results of the manilas, bleached sulphites, and so on, along with the classes of chip, news and container liner. Referring to the curve, you will note that quite a few of the points do fall considerably outside the area of the curve, but in checking over all of these points against the individual data received, we found that generally there was a very definite reason for the point falling either far above or far below the area of the curve. Generally, the influencing factor was due to the percentage of moisture in the sheet leaving the machine. If the moisture leaving the machine was reported rather high, say around 8 or 9 per cent, the point generally fell pretty well below the curve, while on the other hand, if moisture was reported low, around 2 or 3 per cent, the point generally fell pretty well above the curve.

As stated before in this paper, we have not tried, in this preliminary analysis, to take into consideration the other variables such as degree of hydration, speed of the machine and humidity of the air surrounding the driers. Some of the machines reporting were equipped with vapor absorption nozzles, others were not; some were running at very fast speed on new, modern machines and others were running at very slow speed. The question of drainage is also open to discussion. One of the questions which we asked on the data sheet regarded the condition of the driers both in respect to the coating and in respect to the drainage, but naturally almost everyone reported that their driers were in excellent condition. We, of course, doubt this in some cases and no doubt some of the wide variations from the curve are due to poor drainage and a coated condition of the driers.



Data Verified

After we had the data collected and had drawn this curve, we made an attempt to carefully check the curve with two or three machines which we knew to be in very good operating condition, and were very much surprised to see how closely their actual operation came to the operation which was represented by the curve. We, therefore, feel that the data set forth by this curve is fairly accurate, in fact, accurate enough for the average practical everyday operation of a machine. We hope that all board men will check their actual operations against the data shown on this curve and let us have their criticisms and suggestions.

Since we have already set up a standard formula for comparing and basing all drier performance, we felt that we might just as well take the empirical formula from this curve and combine it with our previous formula for production. The formula for this curve is as follows:

$$\text{Steam Pressure} = (\text{Evaporation} \times 31.30) - 27.20$$

The formula for the evaporation on board was as follows:

$$\text{Evaporation} = \frac{\text{Speed} \times \text{Weight} \times \text{Moisture}}{4.36 \times \text{Diameter of Driers} \times \text{Number of Driers}}$$

Now, if we combine these two formulas, we have this final formula which should give us the steam pressure directly from the various operating factors on the machine. This combined formula is as follows:

$$\text{Steam Pressure} = \left(\frac{\text{Speed} \times \text{Weight} \times \text{Moisture} \times 7.18}{\text{Diameter} \times \text{Number}}\right) - 27.20$$

We believe that in this formula we have brought practically all of the variables which affect the drying of paper board to a fairly standard basis and on the average board machine operating on an average sheet of chip or news, the steam pressure which they would require to operate at a given speed should come fairly close to that which could be figured from the formula.

Conclusions

1. We have offered a standard formula for comparing the drying work done on various machines.
2. We have tried to analyze and evaluate the effect of the various variables which enter into the problem of drying.
3. We have made an attempt to follow these recommendations and standardize the performance and drying operation on board machines.
4. We have made an attempt to set up a standard and a formula giving the relative effect of steam pressure on the work done in a drier.

Cooperation Needed

In concluding, we want again to emphasize the point that we do not consider these data as absolutely accurate and final. We expect that there will be plenty of flaws found in the method which we have used in setting up our standard. We do believe, however, that it is possible, with the cooperation of the various mill men in reporting the production and conditions on their various machines, to obtain a final and accurate standard by which we can judge drier performance. The whole matter depends on the cooperation we receive from the various mill men and we therefore ask that any of you who are interested in drying will send us the necessary information on your machine, filling it out in accordance with the formulas which we have set up. We hope that during the next year we will be able to receive enough data so that we can make a very definite recommendation and set up some accurate standards on two or three different grades of paper.

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending December 31, and for the Twelve Months Ending December 31, 1931, Compared with Corresponding Month of Previous Year

IMPORTS—PAPER

		December				Twelve Months Ending December 31			
		1930		1931		1930		1931	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
PAPER AND MANUFACTURERS		.....	$12,156,279	.....	$9,639,147	.....	$147,451,158	.....	$125,623,138
Printing paper—									
Standard news print	lbs...free	388,288,428	11,168,811	336,173,446	8,742,059	4,559,303,478	131,800,333	4,133,811,984	112,169,627
Imports from:									
Finland	lbs.	6,866,468	160,439	6,517,618	133,524	83,592,327	1,930,971	95,984,920	2,098,794
Germany	lbs.	4,352,712	105,608	3,669,526	78,555	27,578,756	672,693	43,820,782	943,139
Norway	lbs.	2,394,082	58,160	2,526,760	58,521	18,654,734	444,155	28,887,020	717,526
Sweden	lbs.	12,780,307	312,670	9,550,545	213,340	138,534,161	3,433,757	133,374,757	3,103,954
Canada	lbs.	327,961,762	9,561,120	274,996,848	7,297,772	3,978,570,153	116,470,307	3,512,111,520	96,796,917
Newfoundland and Labrador	lbs.	33,933,097	970,814	38,912,149	960,347	312,372,024	8,848,403	319,563,013	8,507,567
All other, n. e. s.	lbs...dut.	288,917	10,326	254,704	8,306	2,600,992	122,540	3,000,176	93,963
Greaseproof and waterproof papers	lbs...dut.	37,530	5,958	32,442	8,475	1,032,932	293,779	357,162	75,390
Kraft wrapping paper	lbs...dut.	409,685	15,956	378,870	13,874	7,584,206	296,864	3,996,789	169,190
Other wrapping paper	lbs...dut.	18,695	3,807	93,635	3,872	2,540,362	143,070	2,903,203	135,768
Writing and drawing paper	lbs...dut.	245,447	47,755	216,903	35,924	3,406,660	831,378	2,476,275	476,813
Writing paper and envelope combinations	dut.	.....	16,634	.....	5,510	.....	[2] 263,422	.....	252,974
Surface-coated paper	lbs...dut.	131,494	60,449	74,917	36,098	1,857,748	762,115	1,099,282	538,394
Uncoated paper, decorated or embossed	lbs.dut.	14,291	3,009	4,603	1,244	[2] 92,200	[2] 28,969	145,895	38,059
Tissue and similar papers	lbs...dut.	.....	.....	.....	.....	[1] 2,056,030	[1] 1,130,184	.....	.....
Weighing not over 6 pounds to the ream	lbs...dut	104,295	80,203	100,187	58,454	[2] 730,693	[2] 471,147	1,392,481	884,892
Other	lbs...dut	35,383	17,677	36,590	10,445	[2] 275,002	[2] 111,422	613,631	246,503
Paper boards, n. e. s.—									
Pulp board, in rolls	lbs...dut	1,033,350	22,967	984,475	17,375	42,814,553	970,095	23,262,937	495,453
Paper board, pulp board, n. e. s., and card board	lbs...dut.	799,374	16,575	996,883	18,092	14,027,449	332,852	14,153,985	296,302
Leather board, test and wall board	lbs...dut.	85,174	4,776	78,421	6,020	1,615,178	103,315	2,343,665	121,407
Cigarette paper, cigarette books, and covers	lbs...dut.	1,461,768	336,545	1,534,188	399,763	14,168,393	4,290,682	20,777,285	5,396,469
Hanging paper (wall paper)	lbs...dut.	285,504	58,477	148,867	25,423	2,144,884	618,343	1,034,251	304,513
Duplex decalcomania paper, not printed	lbs...free	48,238	11,060	19,656	3,033	502,276	118,542	405,900	84,786
Paper boxes	dut.	.....	80,399	.....	59,021	.....	1,251,792	.....	968,845
Papier-mâché and pulp manufacturers, n. e. s.	dut.	.....	38,516	.....	21,499	.....	543,395	.....	417,976
All other paper and manufacturers	dut.	.....	156,379	.....	164,660	.....	2,966,919	.....	2,455,814

WOOD PULP

Mechanically ground wood pulp	tons..free	.....	.....	.....	.....	[1] 128,828	[1] 3,593,166	.....	.....
Unbleached	tons..free	23,616	562,556	18,213	403,811	[2] 133,763	[2] 3,435,038	176,206	4,211,240
Bleached	tons..free	513	9,114	2,106	49,251	[2] 4,580	[2] 118,086	11,880	286,782
Sulphite wood pulp—									
Unbleached	tons..free	57,027	2,650,615	41,776	1,677,432	665,049	33,193,598	540,478	23,033,069
Imports from:									
Finland	tons	10,082	452,362	6,365	262,106	99,862	4,819,695	97,467	4,127,380
Germany	tons	775	39,148	2,073	76,050	19,045	1,078,758	22,212	954,613
Norway	tons	1,270	68,874	1,250	49,198	20,206	1,116,503	10,195	421,988
Sweden	tons	32,749	1,542,765	26,403	1,041,689	341,213	17,485,839	300,507	12,937,287
Canada	tons	10,104	470,538	4,983	202,681	170,391	8,048,132	88,604	3,754,962
Bleached	tons..free	27,073	1,759,306	22,579	1,213,117	322,886	22,721,929	319,518	18,887,719
Imports from:									
Finland	tons	1,040	52,801	384	17,867	7,086	388,223	8,922	456,545
Germany	tons	4,191	264,334	2,376	127,746	46,094	3,233,072	47,155	2,766,390
Norway	tons	2,901	177,500	1,767	85,065	36,753	2,490,381	18,011	961,791
Sweden	tons	4,374	282,183	2,942	139,152	44,387	3,052,787	48,963	2,575,213
Canada	tons	13,285	915,721	12,869	731,039	181,203	13,119,599	185,037	11,542,298
Sulphate wood pulp—									
Unbleached (Kraft pulp)	tons..free	41,178	1,618,135	32,728	1,043,640	357,551	16,452,381	344,612	12,035,030
Imports from:									
Finland	tons	1,976	74,251	4,944	164,575	33,439	1,419,362	53,671	1,755,804
Norway	tons	600	21,645	863	27,438	13,071	561,991	4,360	144,777
Sweden	tons	34,436	1,252,910	25,061	771,633	242,065	10,283,488	252,228	8,068,337
Canada	tons	4,166	269,329	987	56,936	65,157	4,026,301	32,216	1,926,022
Bleached	tons..free	3,965	245,296	3,429	311,974	19,533	1,468,599	29,683	2,267,090
Imports from:									
Finland	tons	185	10,879	150	8,940	2,183	133,787	2,021	101,603
Sweden	tons	1,897	71,981	56	3,066	5,198	234,654	7,010	266,058
Canada	tons	1,857	160,752	3,223	299,968	11,165	1,026,074	20,484	1,891,099
Soda pulp	tons..free	337	18,621	95	4,511	[2] 1,932	[2] 126,470	3,055	165,581
Other pulp	tons..free	57	5,017	40	3,763	2,376	177,527	254	21,149

CRUDE PAPER STOCK

Rags for paper stock	lbs...free	9,525,931	178,085	7,632,971	98,518	281,592,177	5,565,340	116,680,789	1,571,148
All other paper stock	lbs...free	9,643,022	174,799	18,729,340	94,748	221,568,051	3,052,291	123,285,085	1,503,180

CHEMICALS AND OTHER PAPER MAKERS' MATERIALS

Colors, dyes, stains, color acids, and color bases, n. e. s.	lbs...dut.	359,106	417,192	296,677	316,115	4,951,964	5,284,166	4,944,141	5,511,855
Imports from:									
Belgium	lbs.	2,674	2,579	772	1,064	63,010	80,686	48,566	58,819
France	lbs.	7,069	8,967	.....	.....	43,686	57,239	67,830	104,505
Germany	lbs.	239,745	270,793	189,424	209,428	3,102,836	3,318,115	2,826,974	3,065,224
Italy	lbs.	4,844	6,549	1,202	1,813	21,298	24,564	15,472	18,683
Switzerland	lbs.	92,182	113,943	98,053	95,547	1,556,607	1,637,126	1,831,778	2,104,661
United Kingdom	lbs.	11,511	12,099	5,887	6,097	114,174	118,766	106,796	117,027
China clay or kaolin	tons..dut.	7,181	74,388	10,101	57,424	210,911	2,197,197	135,210	1,056,617
Casein or lactarene	lbs...dut.	978,710	50,466	493,029	11,660	18,499,656	1,919,898	3,503,249	143,270

[1] Ending June 17, 1930. [2] Beginning June 18, 1930.

(Continued on page 46)

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

(Continued from page 45)

EXPORTS—PAPER

	December 1930 Quantity	December 1930 Value	December 1931 Quantity	December 1931 Value	Twelve Months Ending December 31 1930 Quantity	Twelve Months Ending December 31 1930 Value	Twelve Months Ending December 31 1931 Quantity	Twelve Months Ending December 31 1931 Value
PAPER AND MANUFACTURERS	.....	$1,979,584	.....	$1,534,345	.....	$30,302,733	.....	$22,419,743
Printing paper—								
News print paper ..... lbs.	1,063,760	36,966	2,176,536	60,611	20,408,360	812,231	19,305,341	604,913
Book paper, not coated ..... lbs.	1,800,965	123,248	1,786,073	97,490	31,829,973	2,144,395	19,024,407	1,154,285
Exports to:								
Europe ..... lbs.	99,496	7,031	116,973	8,229	1,906,433	147,194	337,020	28,720
Canada ..... lbs.	282,764	20,704	757,982	33,897	9,573,644	583,721	4,590,788	258,964
Mexico ..... lbs.	15,493	2,326	10,839	1,270	619,214	67,277	302,530	31,340
Cuba ..... lbs.	311,036	19,622	263,423	15,315	3,949,660	263,810	2,247,106	145,060
Argentina ..... lbs.	66,654	5,335	116,073	7,026	1,406,245	101,793	1,107,761	65,703
Other South America ..... lbs.	102,139	6,494	68,179	4,330	1,671,966	127,789	1,165,227	85,245
China, Hong Kong, and Kwantung ..... lbs.	12,987	1,768	16,140	2,727	5,167,773	319,208	3,952,610	197,490
Philippine Islands ..... lbs.	436,196	28,618	318,415	16,754	3,796,287	249,127	2,765,058	169,770
Australia ..... lbs.	62,930	4,651	35,210	1,926	908,223	72,201	1,038,446	59,663
Cover paper ..... lbs.	128,781	21,305	96,951	14,569	2,192,168	343,489	1,712,589	259,448
Greaseproof and waterproof paper ..... lbs.	295,502	60,033	295,958	63,013	3,805,193	741,557	4,634,010	974,505
Overissue and old newspapers ..... lbs.	18,652,906	131,869	16,458,764	136,562	171,312,274	1,335,118	208,112,807	1,538,564
Wrapping paper ..... lbs.	2,952,048	169,527	1,481,388	117,954	44,247,669	2,759,441	28,613,496	1,629,216
Surface-coated paper ..... lbs.	270,207	35,172	345,031	41,613	7,567,037	866,763	5,075,141	580,346
Tissue and crepe paper ..... lbs.	293,654	52,302	267,220	35,448	4,761,586	919,036	2,978,500	505,978
Toilet paper ..... lbs.	463,389	54,106	528,328	53,419	7,420,413	811,976	7,035,353	725,741
Paper towels and napkins ..... lbs.	209,817	24,257	254,766	24,403	3,910,747	451,077	3,516,892	351,555
Boxboard (paperboard and strawboard) ..... lbs.	2,368,341	60,504	1,580,837	39,427	60,370,000	1,498,914	53,033,294	1,181,853
Bristols and bristol board ..... lbs.	195,595	18,326	152,960	11,392	2,313,956	219,473	1,675,121	158,493
Other paper board ..... lbs.	2,382,988	100,445	1,521,706	54,771	33,636,482	1,606,638	40,338,696	1,416,779
Sheathing and building paper ..... lbs.	1,125,367	38,862	734,689	24,361	18,798,454	635,791	15,025,881	450,175
Fiber insulating lath or board ..... sq. ft.	2,903,399	106,308	2,394,455	68,568	62,498,770	2,008,503	37,627,048	1,200,085
Wall board of paper or pulp ..... sq. ft.	1,793,138	60,410	1,246,331	57,965	30,090,007	999,307	18,499,261	591,051
Blotting paper ..... lbs.	245,429	28,795	143,948	14,438	3,114,885	378,802	1,852,020	211,125
Filing folders, index cards, and other office forms ..... lbs.	179,780	59,009	86,506	34,139	1,642,026	604,543	1,300,146	348,450
Papeteries (fancy writing paper) ..... lbs.	27,740	7,741	13,959	2,692	650,598	147,351	272,975	69,754
Other writing paper ..... lbs.	1,344,565	139,808	1,201,281	97,911	21,064,051	2,070,040	14,664,660	1,309,004
Paper hangings (wall paper) ..... rolls	342,128	41,489	125,760	10,514	3,227,269	465,409	2,363,157	287,531
Paper bags ..... lbs.	1,103,257	78,316	793,983	51,822	11,249,662	892,538	11,894,306	826,524
Boxes and cartons ..... lbs.	1,096,606	81,384	970,036	61,092	22,714,876	1,370,631	14,481,547	931,775
Envelopes ..... lbs.	157,642	28,563	120,224	18,499	2,229,246	372,264	1,546,317	237,404
Vulcanized fiber sheets, strips, rods, and tubes ..... lbs.	346,795	80,057	267,568	71,127	4,577,711	1,139,978	3,453,791	961,930
Cash-register and adding-machine paper ..... lbs.	490,110	45,463	864,258	62,655	4,579,383	434,474	8,798,278	686,105
Other paper and paper products	.....	295,319	.....	207,890	.....	4,272,994	.....	3,147,154
WOOD PULP AND PAPER STOCK								
Sulphite wood pulp ..... tons	2,548	129,852	3,800	206,717	31,226	1,670,784	44,457	2,251,130
Soda wood pulp ..... tons	37	2,492	194	12,063	1,808	140,774	1,282	92,643
Other wood pulp ..... tons	128	2,967	90	3,920	10,204	258,995	1,857	62,869
Rags and other paper stock ..... lbs.	4,137,262	47,958	5,153,165	47,995	62,243,038	842,489	64,264,089	683,265
PAPER AND PULP MILL MACHINERY								
Paper and pulp mill machinery	.....	187,341	.....	90,203	.....	3,511,496	.....	1,276,191

Bids and Awards for Government Papers

WASHINGTON, D. C., April 27, 1932.—The Government Printing Office has received the following bids for 10,000 pounds of high finish rope manila filing jackets: Josephson Manufacturing Corporation, at $18.73 per M; R. P. Andrews Paper Company, $18.70; Charles G. Stott & Co., $17.00 and $18.80; Whitaker Paper Company, $17.80; T. A. Cantwell & Co., $18.50 and $18.90; Oles Envelope Corporation, $32.00; United States Envelope Company, $21.10.

For 6,250 pounds of blue antique cover paper: R. P. Andrews Paper Company, 6.62 cents per pound; Virginia Paper Company, 13.25 cents; American Writing Paper Company, 7 cents; Reese & Reese, 9.9 cents; Hawthorne Paper Company, 8.75 cents; Allied Paper Mills, 9 cents; Aetna Paper Company, 6.67 cents; and Knowlton Brothers, 11.25 cents.

The R. P. Andrews Paper Company has been awarded the contract for furnishing 25,000 sheets, (2,525 pounds) of 25 x 32 inch offset paper at 5.75 cents per pound, bids for which were received on April 8.

The Cauthorne Paper Company will furnish 1,000 pounds of red stereotype molding paper in 24 inch rolls at 10.4 cents per pound, bids for which were received on March 30.

Meter and Valve Firms Merge

Announcement is made of the consolidation of two well known industrial firms identified with many industries. Pittsburgh Equitable Meter Company and Merco Nordstrom Valve Company are joining interests. Arrangements have been completed for the Pittsburgh company to acquire all the capital stock of Merco Nordstrom Valve Company and the latter will operate as a division of Pittsburgh Equitable Meter Company.

The Pittsburgh concern is one of the leading manufacturers of meters and regulators. It was founded by the late George Westinghouse. The valve company was founded by S. J. Nordstrom, who invented the "Sealdport" type of lubricated plug valve which is extensively used in the chemical, oil, gas, paper and power industries and in the municipal field.

W. F. Rockwell of the Pittsburgh company becomes president of the Merco Nordstrom Valve Company. Warehouse stocks for both companies are to be carried in Los Angeles, Kansas City, Chicago, Columbia (South Carolina), and certain other points. Sales offices of each company will be available to the other, according to W. F. Rockwell. It is the intention of the enlarged organization to add new products and accessories to the present line of valves, meters and regulators.

WOOD PULP
AGENTS

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GLENS FALLS, N. Y.

Manufacturers of

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GLENS FALLS DECKER AND DECKER WASHER

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PULP GRINDERS, THREE OR FOUR POCKET (Roller Bearings)

Ask us about the
OLIVER-ROGERS WET MACHINE

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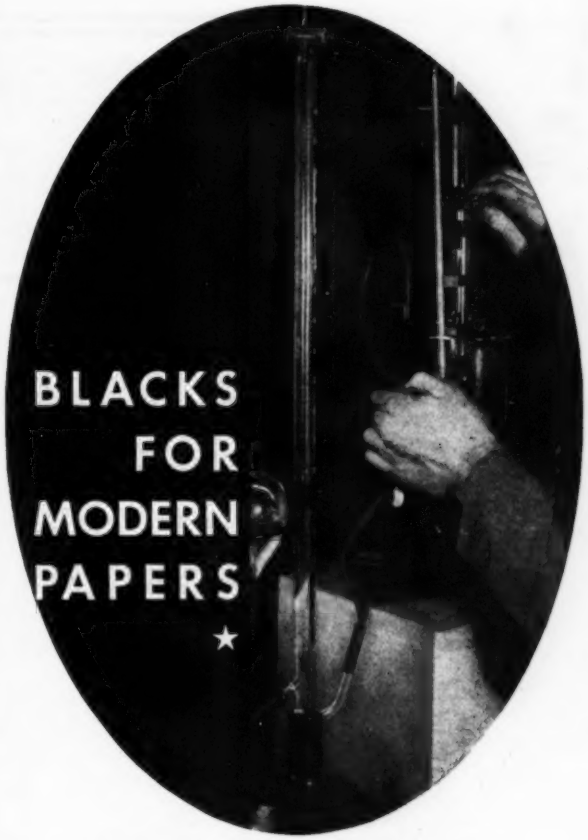

Carbon Blacks, in present day papers, must meet requirements that would have been incredible a few years ago. Successful Blacks must possess the highest degree of color strength and miscibility. United Carbon Company's Dixie & Kosmos Paris Blacks excel in these properties and are known too, for their uniformity. The stringent conditions of their manufacture and the careful tests they are submitted to are your assurance that they can be relied upon with confidence.

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IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

SUMMARY

WEEK ENDING APRIL 23, 1932

Cigarette paper	2243 cs.
Wall paper	16 bls., 10 cs.
Paper hangings	4 bls., 1 cs.
News print	111 bls., 6601 rolls
Printing paper	78 cs.
Wrapping paper	184 cs.
Packing paper	2 cs.
Filter masse	70 bls.
Filter paper	131 bls., 28 cs.
Drawing paper	13 cs.
Tissue paper	2 cs.
Baryta coated paper	130 cs.
Metal coated paper	223 cs.
Surface coated paper	25 cs.
Photo paper	9 cs.
Basic paper	26 cs.
Colored paper	13 cs.
Transfer paper	11 cs.
Bowl paper	5 bls.
Decalcomania paper	44 cs.
Cover paper	2 cs.
Felt paper	13 bls.
Wafer paper	6 cs.
Envelopes	3 cs.
Card board	2 cs.
Miscellaneous paper	5375 rolls, 182 bls., 34 cs.

CIGARETTE PAPER

Champagne Paper Corp., Majestic, Southampton, 3 cs.

Brown & Williamson Tobacco Co., Majestic, Southampton, 12 cs.

American Tobacco Co., Indep. Hall, Bordeaux, 200 cs.

De Manduit Paper Corp., Indep. Hall, St. Nazaire, 1901 cs.

Champagne Paper Corp., Indep. Hall, St. Nazaire, 70 cs.

Max Spiegel & Son, Hamburg, Hamburg, 5 cs.

D. E. Bordner, Hamburg, Hamburg, 2 cs.

WALL PAPER

A. L. Diament & Co., Majestic, Southampton, 2 cs.

Guaranty Trust Co., Hamburg, Hamburg, 6 cs.

F. J. Emmerich, Hamburg, Hamburg, 2 cs., 1 bl.

R. F. Downing & Co., Kwanto Maru, Kobe, 15 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., American Banker, London, 1 cs., 4 bls.

NEWS PRINT

W. H. Bell, Markland, Liverpool, N. S., 4401 rolls.

Jay Madden Corp., Luetzow, Bremen, 68 rolls.

Perkins Goodwin & Co., Luetzow, Bremen, 341 rolls.

——, Stavangerfjord, Oslo, 111 bls., 412 rolls.

Perkins Goodwin & Co., Pr. Roosevelt, Hamburg, 379 rolls.

PRINTING PAPER

E. Dietzgen & Co., Statendam, Rotterdam, 37 cs.

P. Puttman, Pennland, Antwerp, 22 cs.

C. Steiner, Luetzow, Bremen, 14 cs.

T. N. Faiebanks Co., Exeter, Genoa, 45 cs.

WRAPPING PAPER

Sylvania Industrial Corp., Pennland, Antwerp, 7 cs.

——, H. Jaspar, Antwerp, 155 cs.

Borden Riley Paper Co., Luetzow, Bremen, 6 cs.

——, Pr. Roosevelt, Hamburg, 1 cs.

D. E. Bordner, Hamburg, Hamburg, 15 cs.

PACKING PAPER

H. W. Peabody & Co., Exeter, Genoa, 2 cs.

FILTER MASSE

J. Manheimer, Europa, Bremen, 70 bls.

FILTER PAPER

A. Giese & Son, Aquitania, Southampton, 59 bls.

H. Reeve Angel & Co. Inc., Aquitania, Southampton, 1 cs.

H. Reeve Angel & Co. Inc., Amer. Banker, London 10 cs.

H. Reeve Angel & Co. Inc., Majestic, Southampton, 28 bls., 9 cs.

J. Manheimer, Majestic, Southampton, 40 bls.

D. C. Andrews & Co., Majestic, Southampton, 1 cs.

C. Schleicher & Schull Co. Inc., Pr. Roosevelt, Hamburg, 4 bls., 7 cs.

DRAWING PAPER

Keuffel & Esser Co., Amer. Banker, London, 2 cs.

Favor Ruhl & Co., Exeter, Genoa, 11 cs.

TISSUE PAPER

B. F. Drakenfeld & Co., Baltic, Liverpool, 2 cs.

BARYTA COATED PAPER

Globe Shipping Co., Europa, Bremen, 5 cs.

Globe Shipping Co., Luetzow, Bremen, 125 cs.

METAL COATED PAPER

Globe Shipping Co., Europa, Bremen, 16 cs.

Globe Shipping Co., Luetzow, Bremen, 191 cs.

K. Pauli Co., Hamburg, Hamburg, 13 cs.

Taub Hummell & Schnall, Hamburg, Hamburg, 3 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Pennland, Antwerp, 20 cs.

International F'd'g Co., Hamburg, Hamburg, 5 cs.

PHOTO PAPER

Medo Photo-Supply Co., Majestic, Southampton, 4 cs.

J. J. Gavin, Majestic, Southampton, 5 cs.

BASIC PAPER

Globe Shipping Co., Luetzow, Bremen, 26 cs.

COLORED PAPER

F. Murray Hill Co., Pr. Roosevelt, Hamburg, 3 cs.

F. Murray Hills Co., Pr. Roosevelt, Hamburg, 2 cs.

Borden Riley Paper Co., Pennland, Antwerp, 6 cs.

Tamm & Co., Hamburg, Hamburg, 1 cs.

Happel & McAvoy, Hamburg, Hamburg, 1 cs.

TRANSFER PAPER

Rohner Gehrig & Co., Europa, Bremen, 10 cs.

Manhattan Decalcomania Co., Europa, Bremen, 1 cs.

BOWL PAPER

Hurley Johnson Corp., Baltic, Liverpool, 5 bls.

DECALCOMANIA PAPER

L. A. Consmiller, Europa, Bremen, 11 cs.

C. W. Sellers, Europa, Bremen, 12 cs.

B. F. Drakenfeld & Co., Baltic, Liverpool, 21 cs.

COVER PAPER

International F'd'g Co., Hamburg, Hamburg, 2 cs.

FELT PAPER

Heemsoth Basse & Co., Statendam, Rotterdam, 13 bls.

WAFER PAPER

Ipex, Statendam, Rotterdam, 6 cs.

ENVELOPES

Simfred Co. Inc., Pr. Roosevelt, Hamburg, 3 cs.

CARD BOARD

Gevaert Co. of America, Pennland, Antwerp, 2 cs.

MISCELLANEOUS PAPER

Gallagher & Ascher, Statendam, Rotterdam, 5 cs.

Steiner Paper Corp., Statendam, Rotterdam, 16 cs.

H. Reeve Angel & Co. Inc., Drottningholm, Gothenburg, 12 rolls, 14 bls.

The Borregaard Co. Inc., Drottningholm, Gothenburg, 1264 rolls, 168 bls.

T. Johnson, Drottningholm, Gothenburg, 2 cs.

Keller Dorian Paper Co., Majestic, Southampton, 1 cs.

——, Hamburg, Hamburg, 4099 rolls.

Hudson Forwarding Co., Hamburg, Hamburg, 1 cs.

Corn Exchange Bank, Kwanto Maru, Kobe, 9 cs.

RAGS, BAGGINGS, ETC.

Darmstadt Scott & Courtney, Statendam, Rotterdam, 40 bls. rags.

E. J. Keller Co. Inc., Statendam, ——, 38 bls. rags.

N. Y. Trust Co., Amer. Shipper, Hamburg, 20 bls. rags.

——, Amer. Shipper, Hamburg, 70 bls. bagging.

Chase National Bank, Executive, Barcelona, 73 bls. rags.

——, Executive, Barcelona, 84 bls. bagging; 73 bls. rags.

The Barrett Co., Executive, Barcelona, 70 bls. rags; 69 bls. bagging.

D. M. Hicks, Inc., Pennland, Antwerp, 69 bls. flax waste.

Bank of N. Y. & Trust Co., Cameronia, Glasgow, 64 bls. rags.

——, Cameronia, Glasgow, 49 bls. rags.

Katzenstein & Keene, Inc., Indep. Hall, Bordeaux, 113 bls. rags.

The Barrett Co., Indep. Hall, St. Nazaire, 252 bls. rags.

Armstrong Cork Co., Indep. Hall, St. Nazaire, 250 bls. rags.

——, Exeter, Alexandria, 14 bls. rags.

——, Pr. Roosevelt, Hamburg, 28 bls. rags.

E. J. Keller Co. Inc., Hamburg, ——, 25 bls. rags; 34 bls. flax waste.

E. J. Keller Co. Inc., Maria, ——, 236 bls. rags.

Bank of N. Y. & Trust Co., Maria, Trieste, 79 bls. rags.

GLUE STOCK

——, H. Jaspar, Antwerp, 75 bags.

OLD ROPE

Continental Bank & Trust Co., Amer. Shipper, Hamburg, 29 coils, 37 bls.

E. J. Keller Co. Inc., Exermont, ——, 60 coils.

E. J. Keller Co. Inc., Exeter, ——, 186 coils.

——, Hamburg, Hamburg, 34 coils.

CASEIN

D. C. Andrews & Co., Hamburg, Hamburg, 60 bags.

CHINA CLAY

Wilson Paterson & Gifford, Exeter City, Bristol, 110 bags.

Wilson Paterson & Gifford, Baltic, Liverpool, 25 casks.

Whitaker Clark & Daniels, Baltic, Liverpool, 520 bags.

WOOD PULP

Castle & Overton Inc., Statendam, Rotterdam, 1700 bls. wood pulp.

A. Giese & Son, Statendam, Rotterdam, 60 bls. wood pulp.

Castle & Overton Inc., Amer. Shipper, Hamburg, 163 bls. wood pulp, 27 tons.

——, Augustus, Trieste, 286 bls. wood pulp.

J. Anderson & Co., Drottningholm, Gothenburg, 375 bls. sulphite.

Perkins Goodwin & Co., Drottningholm, Gothenburg, 254 bls. sulphite.

E. M. Sergeant & Co., Drottningholm, Gothenburg, 598 bls. kraft soda.

Atterbury Bros. Inc., Fred. VIII, Oslo, 300 bls. sulphite, 50 tons.

Parsons & Whittemore, Inc., Fred VIII, Oslo, 300 bls. chemical pulp, 50 tons.

Castle & Overton Inc., Saco, Rotterdam, 300 bls. wood pulp, 60 tons.

Perkins Goodwin & Co., Stavengerfjord, Drammen, 1000 bls. sulphiite.

E. M. Sergeant & Co., Stavengerfjord, Oslo, 450 bls. chemical pulp.

Chemical Bank & Trust Co., Stavengerfjord, Oslo, 2700 bls. sulphite.

Atterbury Bros. Inc., Stavengerfjord, Oslo, 500 bls. mechanical pulp; 40 bls. sulphite.

——, Pr. Roosevelt, Hamburg, 1560 bls. sulphite.

Castle & Overton Inc., Hamburg, Hamburg, 605 bls. wood pulp, 121 tons.

WOOD FLOUR

B. L. Soberski, Statendam, Rotterdam, 23 bags.

The Burnet Co., Statendam, Rotterdam, 500 bags.

Corn Exchange Bank, Statendam, Rotterdam, 620 bags.

Corn Exchange Bank, Stavengerfjord, Flekkefjord, 400 bags, 20,400 kilos.

PHILADELPHIA IMPORTS

WEEK ENDING APRIL 23, 1932

Castle & Overton Inc., Augsburg, Hamburg, 3850 bls. wood pulp.

Russell McCandless, Augsburg, Hamburg, 504 bls. wood pulp.

E. J. Keller Co. Inc., Augsburg, ——, 359 bls. wood pulp; 79 bls. rags.

(Continued on pare 50)

Cotton and Paper Rolls
Super Calenders
Friction Calenders
Embossing Calenders
Hydraulic Presses and Pumps

Successors to the Granger Foundry & Machine Co.

The Textile-Finishing Machinery Company
PROVIDENCE, R. I.

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DISPENSING CABINETS
AND
FIXTURES
THE STANDARD OF THE PAPER TRADE
GRIFFITH-HOPE CO.
WEST ALLIS, WIS.

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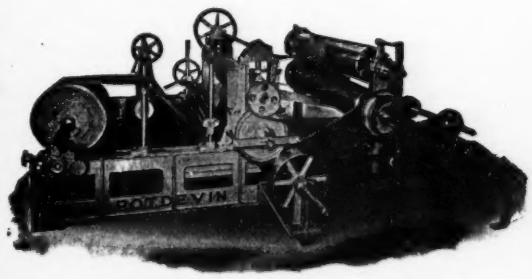
PAPER WAXING MACHINERY
Three Widths—52" - 64" - 80"
LIGHT OR HEAVY COATING
WET OR DRY WAX
ONE OR BOTH SIDES



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1223 38th Street. Dept. 4, Brooklyn, N. Y., U. S. A.
Phones: Windsor 1700. 1701. 1702

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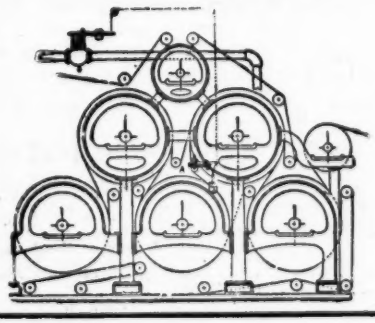

WE ARE SAFE IN OUR PROPOSITION
YOU'LL MAKE NO MISTAKE IN ACCEPTING IT

Pickles Drying Regulator

will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

W. F. PICKLES **Buckland, Conn.**

Imports of Paper and Paper Stock

(Continued from page 48)

Neidich Process Co., Augsburg, Hamburg, 63 cs. tissue paper.
——, Augsburg, Hamburg, 2 cs. paper hangings.
National City Bank, Exeter City, Bristol, 143 coils old rope.
E. J. Keller Co. Inc., Indep. Hall, ——, 145 bls. rags.
Katzenstein & Keene Inc., Indep. Hall, St. Nazaire, 478 bls. rags.
P. Berlowitz, Indep. Hall, St. Nazaire, 56 bls. rags.
Castle & Overton Inc., Indep. Hall, St. Nazaire, 77 bls. rags.
Central Hanover Bank & Trust Co., Kwanto Maru, Osaka, 70 bls. thread waste.
Belgam Corp., Kwanto Maru, Osaka, 155 bls. rags.
Union Waste Works, Kwanto Maru, Osaka, 70 bls. rags.
American Over-Ocean Corp., Kwanto Maru, Kobe, 25 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING APRIL 23, 1932

Congoleum Nairn Co., Indep. Hall, Bordeaux, 258 bls. rags.

Joseph Burton Mitchell Dead

PHILADELPHIA, Pa., April 24, 1932—Joseph Burton Mitchell, founder of the Quaker City Paper Company, and the Dean of the Philadelphia paper industry, passed away at his home 6432 Emlen street, on April 17, following a brief illness of ten days. Mr. Mitchell was one of the last survivors of the early paper distribution houses and the group to found the Philadelphia Paper Trade Association. He was 82 years of age and his death was due to the infirmities of advancing years. Mr. Mitchell became associated with the Philadelphia trade more than half a century ago as member of the old A. G. Eliott Company, a pioneer paper distribution concern of the local industry. On the liquidation of that house in 1905 he founded the Quaker City Paper Company as president of the organization, which began a general paper business at 13 North 6th street, and where he continued as head official until his death. Three years ago the firm moved to 303-311 Vine street into larger and modern quarters. Mr. Mitchell was a member of University Lodge, F. and A. M., and of the Veteran Corps of the First Regiment. He was a former president of the Philadelphia Paper Trade Association and a charter member of that body, although not active in its affairs at the time of his death. Surviving is his widow, Mrs. Frances Frazier Mitchell.

Paper Mill Employment

February employment reported by 405 paper and pulp mills amounted to 78,717, and increase of 0.5 per cent from January but a decrease of 5.7 per cent from February of last year according to the Bureau of Labor Statistics. The weekly payrolls in these mills totaled $1,658,490 an increase of 5.7 per cent over January but a decrease of 21.4 under February of last year.

Three hundred and twelve paper box factories reported their February employment at 21,951, a decrease of 1.6 per cent from January, and of 10.2 per cent from February of last year. The February weekly payrolls in these factories amounted to $426,939, a decrease of 0.8 per cent from January and of 19.2 under February of last year.

New Timken Booklet Out

Timken Roller Bearing Company, of Canton, Ohio, has just published an illustrated booklet announcing the Timken Wear and Lubricant Tester. This machine makes possible simple, quick, inexpensive but accurate tests for the wear and durability of any kind of materials, and proves a decided asset wherever a knowledge of lubricants and materials and their properties would be a help to machine performance. Copies of the booklet may be obtained upon application.

Perry Holder Made Vice-President

P. G. Mumford, president of the American Machine and Metals, Inc., has announced the appointment of Perry Holder as vice-president and director of the Tolhurst Machine Works, well known manufacturers of extractors, which is a subsidiary of the former company. Mr. Holder will be in charge of operations.

Mr. Holder has had wide experience in various fields allied with the textile and chemical industries. He was educated at Phillips Exeter Academy and Yale University, where he specialized in chemistry. For several years, he was sales-manager of the Prosperity Company, Syracuse, N. Y. and more recently assistant to the vice-president of the American Machine and Metals, Inc.

The Tolhurst plant is located in Troy, N. Y., with executive offices located at 100 Sixth Avenue, New York City.

Finnish Paper Exports Larger

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 27, 1932—Finnish paper exports have been larger in both quantity and value since the beginning of the year, according to a recent report from United States Consul J. L. Bouchal, located at Helsingfors.

The increase is attributed largely to the depreciation in the Finnish currency which has enabled exporters to compete more effectively in world markets than previously. Purchases by British importers in anticipation of a tariff on paper have also stimulated Finnish export sales. The same holds true in regard to the increase in chemical pulp and groundwood shipments. The market for thin printings continues to be adversely affected by the situation in China.

G. L. Clark Leaves Smith Paper Co.

Gilbert L. Clark resigned as vice-president and director of The Smith Paper Company, of Lee, Mass., after a service of fourteen years. He became connected with the company in 1918 as chief chemist, and in 1927 was elected vice-president and director, in charge of manufacture. Mr. Clark is also just completing a year as president of the Lee Rotary Club.

LAND O'LAKES CASEIN

High quality Casein made under strict laboratory control. Excellent solubility. Satisfactory viscosity. Write for sample and quotations.

LAND O' LAKES CREAMERIES, INC., MINNEAPOLIS, MINN.
New York City - Chicago - Boston - Philadelphia - Pittsburgh - Syracuse

Sulphur

A FIRST REQUISITE

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Paper Making

Large Production
Ample Reserves
Prompt Deliveries
Purity 99½%

TEXAS GULF SULPHUR CO.
75 E. 45th Street New York City
Mines: Gulf, Newgulf and Long Point, Texas

The B.Q.-Inc. QUALITY PULPS

"HAFSLUND BEAR"
Bleached Sulphite

"FORSHAGA"
Bleached Sulphite

"HURUM SPECIAL"
Extra Strong Kraft

"BAMBLE"
Extra Strong Kraft

Fresh Monthly Shipments—No Closed Winter Season

The Borregaard Company
Incorporated
200 FIFTH AVENUE NEW YORK, N. Y.

100 Tons Kraft Per Day — 58% A. D.

With the Famous Kamyr Wet Machine

Production . . . .

Kraft	up to 100 Tons
Sulphite	up to 80 Tons
Soda	up to 60 Tons
Groundwood	up to 50 Tons

Results . . . . . .

With 1 Press	42% A.D.
With 2 Presses	55% A.D.
With 2 Presses & Predryer	58% A.D.

Saves . . . . . .

Felt, Wires, Labor, Upkeep, Power, Fibre, Floor Space

G. D. JENSSEN CO.

Chrysler Bldg., N. Y. C. *Sole Agents in U. S. A. for* 1017 White Bldg., SEATTLE
PAPER MACHINERY Ltd.
MONTREAL

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, April 27, 1932.

While demand for the various standard grades of paper is only moderately active at present, most of the orders being received are for rush delivery, and it is believed that stocks in the hands of dealers are below normal. Sales forces of the leading paper housese are fairly optimistic. Prices are holding up well in most instances.

The position of the news print market is practically unchanged. One gleam of hope is the report that circulations are increasing. Stocks of news print paper at the end of March totalled 63,548 tons at Canadian mills and 38,677 tons at United States mills, making a combined total of 102,225 tons, compared with 93,521 tons on February 29, according to the News Print Service Bureau.

Conditions in the paper board market are showing little signs of improvement. Box board production is being maintained in sufficient volume to take care of current requirements. Prices are easy. The fine paper market is irregular. Some weakness has developed in the sulphite bond division and instances of shading have been reported. Kraft wrapping paper continues steady.

Mechanical Pulp

Trading in the ground wood market is somewhat restricted. Production of both domestic and imported mechanical pulp is practically keyed to consumption and offerings are not excessive. As a result, the ground wood industry is in a sound statistical position. Prices are generally holding to formerly quoted levels.

Chemical Pulp

The feature of the week in the chemical pulp market was the news that the Senate Finance Committee had rejected the proposals for tariff duties. The continuation of the pulp mill workers strike in Sweden is a factor in the steady condition of the industry at this time. Prices of the various grades remain unchanged.

Old Rope and Bagging

No radical changes were reported in the old rope market. Demand for domestic and imported old manila rope is fairly active considering prevailing business conditions. Small mixed rope is moving in fairly satisfactory volume. The bagging market is quiet. Although roofing bagging is arousing some interest, spot and gunny are dull.

Rags

The domestic rag market continues listless. Demand for the various grades of cotton rags is comparatively slow and prices are weak. There is some seasonal request, however, for roofing rags. The imported rag market remains unchanged. Fluctuations of foreign currencies are seriously affecting the situation.

Waste Paper

Board mill demand for the lower grades of paper stock is fairly persistent. Offerings are limited and quotations on strictly over-issue, strictly folded news and No. 1 mixed paper are well maintained. No. 1 white news is now offered at from 1.25 to 1.35. Demand for the better grades of waste paper is restricted and prices are spotty.

Twine

Most of the business transacted in the local twine market during the past week was along routine lines. Demand for the various grades is fairly satisfactory for the time of year. Supplies are moving into consumption at a steady pace. Prices are holding fairly well although there are reports of concessions on extra desirable orders.

New E. D. Jones & Sons Appointment

E. D. Jones & Sons Company, Pittsfield, Mass., announce the consummation of arrangements with Canadian Allis-Chalmers, Limited, Toronto, Ont., for the latter to manufacture and sell the well known Jones paper mill products to Canadian customers.

With this new representation it has been arranged to coordinate the work and interchange of information between the respective engineering and manufacturing departments so as to insure that the Jones "Made in Canada" products will compare exactly with the usual, recognized high standard quality of workmanship, materials and design of Jones machinery.

While the above arrangement provides for the manufacture and sale of Jones products in Canada, it has been pointed out that it is optional with Jones' Canadian customers whether the Jones machinery be manufactured and sold in Canada or manufactured and sold direct from the shops in Pittsfield, as in the past.

This new arrangement between these two well known companies will provide for a still wider distribution of Jones products in Canada. All inquiries directed to Canadian Allis-Chalmers, Ltd., Toronto, Ont., or to E. D. Jones & Sons Company, Pittsfield, Mass., will receive prompt attention.

New Detector for Paper Machines

A new detector for paper making machines has been patented by Joseph A. Audet and Jean Baptiste Comeau, of Bathurst, New Brunswick, Canada. This invention is a device which can be applied to paper making machines or other equipment, whereby, during the winding of the paper, indication is given of any holes therein. The indications may be audible, visual, recording, or all three. This device also indicates the location of any holes which may appear in the paper.

It is claimed that workmen will be more efficient and will produce better paper if they know that they have an automatic device such as this, which would give them an incentive to keep watch over their product. The manufacturer would then profit from a more uniform, higher quality paper. For any additional information desired interested readers should communicate with Joseph A. Audet, P. O. Box 506, Bathurst, New Brunswick, Canada.

Prompt deliveries made from stocks in
NEW YORK
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PHILADELPHIA
CHICAGO

TRADE MARK

SIXTY years ago we did not have all the facilities that we have today, such as large factories, up-to-date application laboratories, and a working force devoting all its time to the Paper Industry.

If you are one of the few who do not know H. & M. Colors, Quality and Service, take it up with our representative on his next visit, or if you prefer, write or wire us.

We want you to come to us for any assistance that we can offer you.

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(PAPER MAKERS' ALUM)

THE Standard Purity of this Company's product is maintained in an uncompromising degree, regardless of whether successive deliveries are from one or various of the Company's Works.

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Sales Offices: Buffalo, Chicago, Cleveland, Denver, Los Angeles, Philadelphia, Pittsburgh, Providence, San Francisco, St. Louis.
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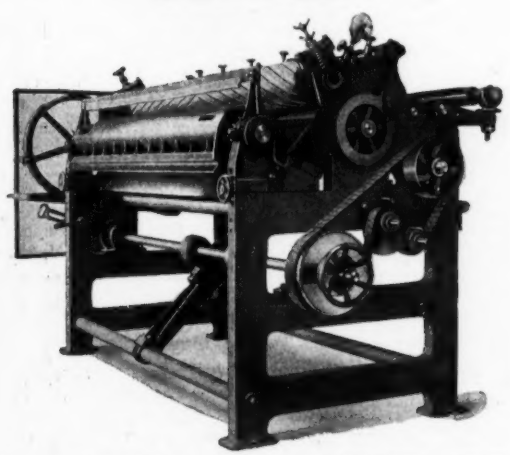
Also BAKER & ADAMSON C.P. ACIDS..REAGENTS *and* FINE CHEMICALS

MODEL 28
ROLLER BEARING CUTTER



HAMBLET MACHINE CO.
LAWRENCE, MASS.

MAKERS OF
SINGLE, DUPLEX AND DIAGONAL PAPER CUTTERS, CUTTER KNIVES, PATENT TOP SLITTERS.

THE DRAPER FELTS

All kinds and styles of Felts for all kinds and styles of Papers.

Write us about your Felt problems and let us help you reduce your Felt Costs—we will call anywhere at any time.

DRAPER BROS. COMPANY
CANTON, MASS.

Woolen manufacturers since 1856

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, April 27, 1932.

BLANC FIXE.—Steadiness prevails in the blanc fixe market. Prices are generally well maintained. The pulp is still quoted at from $42.50 to $45.00 per ton; while the powder is selling at from 3½ cents to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—The position of the bleaching powder market is practically unchanged. Contract shipments are moving in fairly heavy volume. Prices are steady. Bleaching powder is still quoted at from $1.75 to $2.00 per 100 pounds, in drums, at works.

CASEIN.—The casein market continues weak. Domestic standard ground is still quoted at 6 cents and finely ground at 7 cents per pound. Argentine standard ground is selling at 8¼ cents and finely ground at 9½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Demand for caustic soda is moderately active. Prices are holding to schedule, in most instances. Solid caustic soda is quoted at from $2.50 to $2.55; while the flake and ground are selling at from $2.90 to $2.95 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market continues quiet. Contract shipments are moving in seasonal volume. Imported china clay is quoted at from $11 to $13 per ton, ship side; while domestic paper making clay is selling at from $7 to $11 per ton, at mine.

CHLORINE.—Conditions in the chlorine market are fairly satisfactory. The contract movement is normal. Prices are generally holding to schedule. Chlorine is quoted at $1.75 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is fluctuating slightly. The grades of gum rosin used in the paper mills are quoted at from $3.60 to $4.05 per 280 pounds, in barrels, at works. Wood rosin is selling at $2.80 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Trading in the salt cake market is light at present. Prices remain unchanged. Salt cake is quoted at from $15 to $16; chrome salt cake at from $12 to $13 per ton, in bulk, at works. Imported salt cake is selling at from $14 to $15 per ton, ship side.

SODA ASH.—The soda ash market is exhibiting a strong undertone, despite a slight falling off in demand. Prices remain unaltered. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: In bulk, $1; in bags, $1.25; and in barrels, $1.38.

STARCH.—Most of the business transacted in the starch market is along routine lines. The contract movement is irregular. Prices are holding to schedule. Special paper making starch is quoted at $2.54, in bags; and at $2.81 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—The sulphate of alumina market is fairly active. Prices are steady and unchanged. Commercial grades are quoted at from $1.25 to $1.40; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market is listless. Sulphur is quoted at $18 per long ton, on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Supplies of talc are moving into consumption in fairly heavy volume, considering prevailing business conditions. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at mine; while imported talc is selling at from $18 to $22 per ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@	38.00
Bonds	5.00	@	53.25
Index	6.00	@	12.00
Writings—			
Extra Superfine	6.50	@	15.00
Superfine	6.25	@	14.75
Tub sized	4.50	@	7.00
Engine sized	4.00	@	5.00
Book, Cased—			
S. & S. C.	5.25	@	—
M. F.	3.75	@	5.00
Coated and Enamel	6.25	@	9.75
Lithograph	6.75	@	11.25
Tissues—Per Ream—			
White No. 1	.65	@	.70
Anti-Tarnish M. G. only	.65	@	.70
Colored	.70	@	.90
White No. 2	.50	@	.60
Kraft	.65	@	.70
Manila	.55	@	.60
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	3.37½	@	—
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.00	@	3.00
Card Middies	4.00	@	5.00
Glassine—			
Bleached, basis 25 lbs., No. 1	.09¾	@	—
No. 2	.11¼	@	—
Bleached, basis 20 lbs.	.11¾	@	—
(Delivered New York)			
News, per ton—			
Roll, contract	53.00	@	—
Rolls, spot	53.00	@	—
Sheets	58.00	@	—
Side Runs	38.00	@	42.00
Kraft—			
No. 1 Domestic	4.75	@	6.00
No. 2 Domestic	3.25	@	4.00
Southern	3.25	@	4.00
Imported	3.50	@	4.30
Boards—per ton—			
News	24.00	@	27.00
Straw	34.50	@	45.00
Chip	24.00	@	27.00
Binders' Boards	62.00	@	70.00
Standard 85 Test Liner	30.00	@	32.50
Sgl. Mla. Lt. Chip	35.00	@	37.50
(F. o. b. Mill)			
Wood Pulp Boards	70.00	@	80.00

Mechanical Pulp

(On Dock)

No. 1 Imported—			
Moist	20.00	@	22.00
Dry	22.00	@	24.00
(F. o. b. Mill)			
No. 1 Domestic	18.00	@	24.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	2.10	@	2.90
Easy Bleaching	1.60	@	1.75
No. 1 strong unbleached	1.50	@	1.65
Mitscherlich unbleached	1.60	@	1.75
No. 2 strong unbleached	1.25	@	1.35
No. 1 Kraft	1.50	@	1.65
No. 2 Kraft	1.35	@	1.40
Sulphate—			
Bleached	1.85	@	2.15
(F. o. b. Pulp Mill)			
Sulphite (Domestic)—			
Bleached	2.00	@	3.75
Easy Bleaching	1.75	@	1.90
News	1.50	@	1.65
Mitscherlich	2.40	@	2.55
Kraft (Domestic)	1.60	@	2.75
(Delivered Paper Mills)			
Soda Bleached	2.50	@	—

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	4.50	@	4.75
New White, No. 2	3.00	@	3.50
Silesias No. 1	3.75	@	4.00
New Unbleached	5.25	@	6.25
New Blue Prints	3.25	@	3.50
New Soft Blacks	2.75	@	3.00
Blue Overall	3.25	@	3.75
Fancy	1.75	@	2.00
Washables	1.25	@	1.50
Mixed Khaki Cuttings	2.50	@	3.00
Pink Corset Cuttings	2.75	@	3.25
O. D. Khaki Cuttings	3.25	@	3.50
Men's Corduroy	1.00	@	1.25
New Mixed Blacks	2.25	@	2.50

Old Rags

White, No. 1—			
Repacked	5.25	@	5.75
Miscellaneous	4.25	@	4.75
White, No. 2—			
Repacked	3.00	@	3.50
Miscellaneous	2.30	@	2.50
St. Soiled, White	1.50	@	1.75
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.65	@	1.85
Black Stockings	3.25	@	3.75
Roofing Rags—			
No. 1	.53	@	.58
No. 2	.48	@	.53
No. 3	.43	@	.48
No. 4	.38	@	.43
No. 5A	.33	@	.38

Foreign Rags

New Rags

New Dark Cuttings	1.40	@	1.50
New Mixed Cuttings	1.60	@	1.75
New Light Silesias	3.40	@	3.50
Light Flannelettes	3.25	@	3.50
Unbleached Cuttings	5.50	@	6.00
New White Cuttings	4.75	@	5.00
New Light Oxfords	4.00	@	4.25
New Light Prints	2.00	@	2.25

Old Rags

No. 1 White Linens	5.25	@	5.50
No. 2 White Linens	4.50	@	4.75
No. 3 White Linens	3.25	@	3.75
No. 4 White Linens	1.75	@	2.25
No. 1 White Cotton	4.00	@	4.25
No. 2 White Cotton	3.00	@	3.25
No. 3 White Cotton	2.25	@	2.50
No. 4 White Cotton	1.40	@	1.50
Extra Light Prints	1.90	@	2.10
Ord. Light Prints	1.60	@	1.75
Med. Light Prints	1.40	@	1.55
Dutch Blue Cottons	1.35	@	1.40
French Blue Linens	1.90	@	2.00
German Blue Linens	1.80	@	1.90
German Blue Cottons	1.20	@	1.25
Checks and Blues	1.25	@	1.30
Lindsay Garments	.75	@	.80
Dark Cottons	.70	@	.75
Old Shopperies	.55	@	.60
New Shopperies	.60	@	.65
French Blues	1.25	@	1.30

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.10	@	1.20
Domestic	1.15	@	1.25
Wool Tares, light	.90	@	.95
Wool Tares, heavy	.90	@	.95
Bright Bagging	.85	@	.90
Small Mixed Rope	.80	@	.90
Manila Rope—			
Foreign	1.50	@	1.60
Domestic	1.50	@	1.75
New Burlap Cut	1.65	@	1.75
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
Hard, white, No. 1	2.15	@	2.35
Hard, white, No. 2	1.55	@	1.65
Soft, white, No. 1	1.40	@	1.50
White envelope cuttings	1.80	@	1.90
Flat Stock—			
Stitchless	.68	@	.78
Overissue Mag.	.68	@	.78
Solid Flat Book	.60	@	.65
Crumped No. 1	.45	@	.50
Solid Book Ledger	1.75	@	1.85
Ledger Stock	.60	@	.70
New B. B. Chips	.20	@	.30
Manilas—			
New Env. Cut.	1.65	@	1.75
New Cuttings	1.25	@	1.35
Extra No. 1 old	1.00	@	1.10
Print	.40	@	.45
Bogus Wrapper	.40	@	.45
Container	.25	@	.30
Old Kraft Machine— Compressed bales	.85	@	.95
News—			
No. 1 White News	1.25	@	1.35
Strictly Overissue	.35	@	.45
Strictly Folded	.30	@	.35
No. 1 Mixed Paper	.20	@	.25

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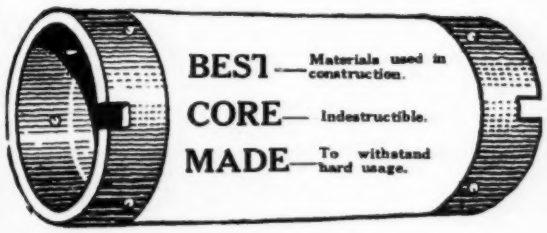

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HAMILTON, ONTARIO

Elixman Paper Core Company
CORINTH, N. Y.

Twines
(F. o. b. Mill)

Cotton—			
B. C., 18 basis	.30	@	.32
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Finisned Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.11¾	@	.12¾
Tube Rope—			
4-ply and larger	.09¾	@	.11¾
Fine Tube Rope—			
4-ply	.11	@	—
3-ply	.12	@	—
2-ply	.13	@	—
Paper Makers Twine			
Balls	.08¾	@	.10¼
Box Twine, 2-3 ply	.07	@	.08
Jute Rope	.09	@	.10
Amer. Hemp, 6	.27	@	.29
Java Sisal—			
No. 1 Basis	.10	@	—
No. 2 Basis	.09	@	—
New Zealand Sisal	.10	@	—
Sisal Lath Yarn—			
No. 1	.12	@	.14
No. 2	.10	@	.12
Manila Twine	.23	@	.28

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	05	@	.11
Superfine Writing	.18	@	.24
No. 1 Fine Writing	.14	@	.18
No. 2 Fine Writing	.12	@	.14
No. 3 Fine Writing	.07	@	.18
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¾	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	4.50	@	5.00
Southern Kraft	3.25	@	—
No. 2 Kraft	3.25	@	—
Wood Tag Boards	.04¼	@	.06¾
Sulphite Screenings	.03	@	.03¾
Manila Tissue	.07	@	.07¾
White Tissue	.07¼	@	.07½

(Delivered Central Territory)

News, per ton—			
Rolls, contract	53.00	@	—
Sheets	58.00	@	—
Boards, per ton—			
Plain Chip	30.00	@	35.00
Solid News	32.50	@	37.50
Manila Lined Chip	40.00	@	45.00
Container Lined—			
85 Test	50.00	@	55.00
100 Test	55.00	@	60.00

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.75	@	1.80
No. 1 Hard White	1.55	@	1.60
No. 1 Soft White	1.40	@	1.45
Ledger & Writings	.55	@	.65
Solid Books	.50	@	.55
Blanks	1.15	@	1.20
Krafts	.95	@	1.00
New Kraft Cuts	1.40	@	1.50
Manila Env. Cuts	1.40	@	1.50
Ex. No. 1 Manila	1.00	@	1.10
Print Manila	.35	@	.40
Overissue News	.45	@	.55
Old Newspapers—			
No. 1	.45	@	.50
No. 2	.30	@	.35
Mixed Papers—			
No. 1	.25	@	.30
No. 2	.15	@	.20
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.04	@	.40
Ledgers	.06	@	.40
Writings—			
Superfine	.10	@	.18
Extra Fine	.15	@	.26
Fine	.15	@	.26
Fine, No. 2	.10	@	.25
Fine No. 3	.05½	@	.18
Book, M. F.	.04¾	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.06	@	.16
Coated Lithograph	.06	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.06	@	.09
Manila Sul., No. 1	.03	@	.05
Manila No. 2	.03	@	.04
No. 1 Kraft	.05¼	@	.06
No. 2 Kraft	.03¾	@	.04¼
Southern Kraft No. 1	—	@	.04
Southern Kraft No. 2	—	@	.03¾
Common Bogus	.03	@	.04

(Delivered Philadelphia)

News Print Rolls	58.00	@	62.00
Straw Board	50.00	@	—
News Board	30.00	@	32.00
Chip Board	25.00	@	27.50
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	73.00	@	75.00
No. 2, per ton	63.00	@	65.00
Carload lots	62.00	@	67.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.05	@	.05½
New White, No. 2	.04	@	.04¼
Light Silesias	.04	@	.04½
Silesias, No. 1	.04	@	.04½
Black Silesias, soft	.04	@	—
New Unbleached	.05½	@	.06
Washable, No. 1	.02	@	.02½
Blue Overall	.04	@	.04½
Cottons—According to grades—			
Washable, No. 2	.01½	@	.02
New Blue	.01¾	@	.02
Fancy	.02	@	—
New Black Soft	.02	@	.03
New Light Seconds	.01¾	@	.02
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O.D.	.04½	@	.05
No. 2 Mixed	.03½	@	.04
Corduroy	.02½	@	.03
New Canvas	.06½	@	.07
New Black Mixed	.02½	@	.03

Domestic Rags (Old)

White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.00	@	2.50
M. G.	3.50	@	4.00
Thirds and Blues—			
Miscellaneous	1.00	@	1.25
Repacked	1.50	@	1.75
Black Stockings (Export)	3.00	@	3.50
Roofing Stock—			
Foreign No. 1	1.00	@	1.10
Repacked	.70	@	.80

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	—
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.50
No. 2	.80	@	1.00
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	1.90	@	2.00
No. 2 Hard White	1.75	@	1.80
No. 1 Soft White	1.60	@	1.70
No. 2 Soft White	1.40	@	1.50
No. 1 Mixed	.45	@	.55
No. 2 Mixed	.40	@	.50
Solid Ledger Stock	1.00	@	1.10
Writing Paper	.80	@	.90
No. 1 Books, heavy	.60	@	—
No. 2 Books, light	.45	@	—
No. 1 New Manila	1.25	@	1.50
No. 1 Old Manila	1.00	@	1.25
Print Manila	.45	@	—
Container Manila	.40	@	.45
Old Kraft	.90	@	1.00
Common Paper	.20	@	—
No. 1 Mixed Paper	.25	@	.30
Straw Board, Chip	.25	@	.35
Binders Board, Chip	.25	@	.35
Corrugated Board	.35	@	.40
Overissue News	.45	@	.50
Old Newspaper	.30	@	.35

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.06	@	.12½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.05½	@	.11½
Rag Content	.12	@	.30
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04½	@	.05½
No. 2 Kraft	.03¼	@	.03½

(F. o. b. Boston)

Southern Kraft	.03¼	@	.03½

(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)

Common Bogus	.02	@	.02¾

(Delivered New England points)

News Print, rolls	—	@	52.50
Straw Board, rolls	.009	@	35.00
Straw Board in Sheets, basis 35s to 70s	—	@	40.00
Filled News Board	25.00	@	30.00
Chip Board	—	@	25.00
Chip Board (Creasing)	25.00	@	27.50
Single Manila Lined Chip	—	@	35.00
Single White, Patent Coated News Board—Bender	45.00	@	55.00
Wood Pulp Board	70.00	@	75.00
Binder Boards	62.00	@	75.00

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.75	@	3.50
No. 2 Hard White	2.25	@	2.50
No. 1 Soft White	1.40	@	1.60
No. 2 Mixed	.50	@	.55
No. 1 Mixed	.75	@	.85
Solid Ledger Books	1.30	@	1.50
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.90	@	1.10
No. 1 Books, heavy	.60	@	.70
No. 1 Books, light	—	@	.45
Crumpled Stitchless Book Stock	1.00	@	1.25
Manila Env. Cuttings	1.50	@	1.60
No. 1 Old Manila	.80	@	.90
White Blank News	1.20	@	1.30
Kraft No. 1	.75	@	.85
Manila	.80	@	.90
No. 1 Mixed Paper	.15	@	.17½
Print Manila	.35	@	.40
Overissue News	.35	@	.45
Old Newspapers	.27½	@	.32½
Box Board, Chip	.17½	@	.20
Corrugated Boxes	.22½	@	.27½
Screening Wrappers	.25	@	.32½

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.00	@	1.10
Domestic	1.55	@	1.75
Manila Rope—			
Foreign	1.40	@	1.60
Domestic	1.55	&	1.75
Transmission Rope	—	@	.90
Mixed String	.30	@	.35
Jute Rope	—	@	.85
Jute Carpet Threads	.35	@	.50
Bleachery Burlap	—	@	2.25
Scrap Burlap	.65	@	.80
No. 1 Scrap Burlap	.80	@	.90
Scrap Sisal	.75	@	1.00
Scrap Sisal for shredding	—	@	1.25
Wool Tares, heavy	.80	@	90
New Burlap Cutting	.75	@	1.00
Australian Wool Pouches	1.25	@	1.50
Heavy Baling Bagging	1.25	@	1.35
Paper Mill Bagging	.60	@	.70
Bagging No. 2	—	@	.40
No. 1 Burlap	—	@	3.00

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.04½	@	.04¾
New White No. 2	.03	@	.03¾
Silesias No. 1	.04½	@	.05
New Black Silesias	.02½	@	.03¼
New Unbleached	.04½	@	.05¼
Fancy	—	@	.03¾
Washable	—	@	.03½
Cottons—According to grades—			
Blue Overalls	—	@	.05
New Black, soft	.04	@	.04½
Khaki Cuttings	.03	@	.03½
O. D. Khaki	.03½	@	.03¾
Corduroy	.02¾	@	.03
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.25	@	2.50
White No. 2—			
Repacked	.02¼	@	.02½
Miscellaneous	.02	@	.02¼
Twos and Blues	1.00	@	1.25
Thirds and Blues—			
Repacked	—	@	.85
Miscellaneous	.70	@	.75
Black Stockings	2.50	@	3.00
Roofing Stock—			
No. 1	.58	@	.60
No. 2	.48	@	.50
No. 3	.43	@	.48

Foreign Rags
(F. o. b. Boston)

Dark Cottons	—	@	.60
New No. 1 White Shirt Cuttings	4.50	@	5.00
Dutch Blues	—	@	1.80
New Checks & Blues	4.00	@	4.50
Old Fustians	1.10	@	1.15
Old Linsey Garments	.70	@	—

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.10¼	@	—
No. 2 Sulphite	.08½	@	—
No. 1 Colored	.10¾	@	—
No. 2 Colored	.09	@	.10½
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (Carloads)	6.65	@	—
No. 3 M. F. (Carloads)	6.20	@	—
No. 1 S. C. (carloads)	7.15	@	—
No. 3 S. C. (carloads)	6.65	@	—
No. 4 S. C. (carloads)	5.70	@	—
No. 1 Coated and Litho	12.50	@	—
No. 2 Coated and Litho	11.50	@	—
No. 3 Coated and Litho	10.00	@	11.50
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.40	@	—
White Wrap	3.00	@	—
"B" Manila	4.90	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.40	@	—

(Delivered Toronto)

News, per ton—			
Rolls (contract)	56.50	@	57.00
Sheets	61.50	@	—

Pulp
(F. o. b. Mill)

Ground Wood	30.00	@	32.00
Sulphite easy bleaching	45.00	@	—
Sulphite, news grade	40.00	@	—
Sulphite, bleached	58.00	@	65.00
Sulphate	55.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.50	@	—
Soft White	2.25	@	—
White Blk. News	1.50	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	—
Light and Crumpled Book Stock	.80	@	—
Ledgers and Writings	1.00	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	.65	@	—
Kraft	1.75	@	—
News and Scrap—			
Strictly Overissue	.50	@	—
Strictly Folded	.50	@	—
No. 1 Mixed Paper	.40	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.06½	@	.10
Fancy Shirt Cuttings	.06	@	.06¾

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PAPER TRADE JOURNAL

ESTABLISHED 1872

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SIXTIETH YEAR

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